

AMERICAN BEE JOURNAL

SEPTEMBER, 1915

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American Bee Journal

Bingham Bee Smokers and Uncapping Knives



NEW BINGHAM
BEE SMOKER
Patented

Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra	ship. wt.	Price
Smoke Engine, 4 inch	28 oz.	\$1.25
Doctor 3 1/2	26 oz.	.85
Conqueror 3	23 oz.	.75
Little Wonder 2 1/2	16 oz.	.50
Smoke Engine or Doctor in copper	50c extra	
Uncapping Knives, improved Cold Handle		
Stan'd Length 8 1/2	20 oz.	.75
Extra long 10	24 oz.	.85
Steam Heated		
3 feet tubing	36 oz.	2.50

Friction-top pails, 5 lb., size per 100, \$4.50; 10-lb. size per 100, \$6.25; 60-lb. cans two in a case, 10-case lots, 60c; 25-case lots, 50c; 50-case lots, 58c per case, f. o. b. Chicago. State quantity wanted and get our shipping case prices.

Woodman's double-wall Protection Hives, single-wall hives, Good enough Brand Sections, shipping cases, foundation, and all supplies. Send us a list of the goods wanted and let us figure on your 1916 requirements.

A. G. WOODMAN CO., Grand Rapids, Mich.

QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins.....	\$.50	\$2.75	\$5.00
Untested.....	.85	4.50	8.00
Select untested.....	1.00	5.00	9.00
Warranted.....	1.10	5.50	9.50
Tested.....	1.50	7.50	13.50
Select tested.....	1.75	9.00	15.00
Tested breeding.....	3.00		
Select tested breeding.....	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen.....	\$1.50
2 frame nuclei without queen.....	2.75
3 frame nuclei without queen.....	3.50
Colony 8-frame hive without queen.....	7.50
Colony 10-frame Danz. without queen.....	9.50
Colony 10-frame hive without queen.....	9.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

1/2-pound package, wire cage.....	\$1.00
1-pound package, wire cage.....	1.50
2-pound package, wire cage.....	2.00

No queen supplied at these prices. Make selection and add to above prices.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good. Try us. We are sure to please you.

Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

BUCKEYE CHAFF HIVES DOVETAILED HIVES

Sections, Comb Foundation

Choice Northern-Bred Italian Queens

Bees by the pound

General Agents for Root's Goods in Michigan

SEND FOR 1915 CATALOG

M. H. HUNT & SON
Lansing, Mich.

FRICION-TOP PAILS

GILLE For
MFG. CO. Honey,
Dept. B, Syrups,
Kansas Sorghum,
City, Mo. Etc., Etc.



Wanted

Choice Grades of EXTRACTED HONEY

Send Sample and State Quantity
How packed and the lowest
price you will take

We are always in the market for
Beeswax, and pay highest market
prices.

Hildreth & Segelken

265-267 Greenwich St., New York, N. Y.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

SUPPLIES AND BEES

If you need supplies or bees shipped promptly, write us. Our stock is complete. No delays. Chaff and single walled hives. Bees by the pound, nucleus or full colony. Untested queens, \$1.00. Tested, \$1.25. Catalog free.

I. J. STRINGHAM

105 Park Place, New York

APIARIES: Glen Cove, L. I.



A Nice

1 pound package Italian
bees with queen, \$1.25;
2-fr. nuclei with queen,
\$1.50. Shipped C. O. D.

ROSEDALE APIARIES
Big Bend, Louisiana

NEW ENGLAND BEE KEEPERS

Everything in Supplies

New Goods. Factory Prices.

Save Freight and Express Charges

CULL & WILLIAMS CO.,
Providence, R. I.

QUEENS OF QUALITY

THREE BANDED ITALIANS

First class untested queens remainder of the season, 60 cts. each; \$7.00 per dozen. Satisfaction guaranteed.

J. I. BANKS, DOWELLTOWN, TENN.

American Bee Journal

PROTECT YOUR BEES AGAINST FOULBROOD By using "falcon" queens

One of the prominent beekeepers of New York State writes :

"The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to."

Can you afford to run the chance of letting foulbrood invade your apiary when "**Falcon**" Italian queens are no more expensive than the ordinary blacks and hybrids which oftentimes cause a catastrophe in an apiary by being so susceptible to foulbrood.

PRICES OF "FALCON" QUEENS—THREE-BANDED ITALIANS, GOLDEN ITALIAN AND CARNIOLANS

After July 1			After July 1		
Untested.....	I	6	Tested.....	I	6
Select untested.....	1.00	5.50	Select tested.....	2.00	10.00
				I 2	
				\$15.00	

SAFE ARRIVAL AND SATISFACTION GUARANTEED

DEALERS EVERYWHERE

RED CATALOG, Postpaid

"Simplified Beekeeping," Postpaid

W. T. Falconer Mfg. Co.,

Falconer, New York

Where the good bee-hives come from

GOLDEN ITALIAN QUEENS

Mr. Beekeeper, do you want the best queens that money can buy? If so, try this strain of Golden that for fifteen years has been a leader. All queens reared from superior Golden mothers and mated with select Golden drones; are large, vigorous and prolific; the bees gentle and hustlers, and are noted throughout the United States as a disease-resisting strain. Mated from strong nuclei, three to five full Langstroth frames. No disease. Safe arrival (U. S. and Can.), purity of mating and satisfaction guaranteed. Write for descriptive circular.

PRICES OF QUEENS

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	\$1.50	\$7.50	\$13.50	\$1.25	\$6.50	\$11.50	\$1.00	\$5.00	\$9.00	\$.75	\$4.00	\$7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	11.00	18.00

Breeders, \$5.00 to \$25.

BEN G. DAVIS, Spring Hill, Tennessee

Please mention Am. Bee Journal when writing.

Quality Hill Queens

"The Queens You'll Eventually Buy"

Quality Hill Queens are of a famous strain, greatly improved. All cells are built in 10-frame colonies, brimful of bees, and during a continuous honey flow. For hardiness, gentleness and honey gathering qualities, they are better than most. Four frame nuclei used for mating. Many report them very resistant to European Foulbrood. No disease. Italians.

Our Guarantee—All queens will reach you alive, in good condition, purely mated, and will give satisfaction. Queens which prove to be injured in the mails will be replaced if returned. Reference, Plainfield, Ill., State Bank.

I			I		
Untested.....	6	12	Untested.....	6	12
Select untested....	1.00	5.00	Select tested.....	2.50	10.00

Breeders \$4.00 up

K. E. HAWKINS, Plainfield, Illinois

BARNES' Foot-Power Machinery



Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it."

W. F. & JOHN BARNES
995 Ruby St., ROCKFORD, ILLINOIS.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

HONEY AND BEESWAX

CHICAGO, Aug. 16.—Shipments of comb honey are arriving quite freely and are meeting with good demand. Sales so far have been at from 17@18c per pound for the No. 1 to fancy grades. Very little amber is offered, but has been sold at 13@15c per pound, according to color and kind. The quality of the honey is most excellent, and we look for a free consumption.

Extracted is also arriving freely. As yet the demand is very meager. Some lots have not been properly ripened, but the majority of it is of fine quality. Prices for white are ranging from 7@9c per pound with the ambers from 6@7c per pound, depending upon the kind, flavor and quality.

Beeswax is steady at from 30@32c per pound, according to color and cleanliness.

R. A. BURNETT & CO.

KANSAS CITY, MO., Aug. 14.—The receipts of comb honey are increasing, and prices are lower. There is no change in the condition of extracted honey. We quote as follows: No. 1 white comb honey, 24 section cases, \$3.50 to \$3.60; No. 2, none on the market. No. 1 amber, 3.25 to \$3.35; No. 2, \$2.75 to \$3.00. Extracted, white, per pound, none on the market. No. 2 amber, 6@7½c. Beeswax, No. 1, 28c; No. 2, 25c.

C. C. CLEMONS PRODUCE COMPANY.

DENVER, Aug. 21.—The first of the new crop of comb honey is now coming in and sells locally at the following prices per case of 24 sections: Fancy, \$3.60; No. 1, \$3.38, and No. 2, \$3.15. Crop promises to be light. Local prices on extracted unchanged. White, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c. We pay 25c cash and 27c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.

Frank Rauchfuss, Mgr.

LOS ANGELES, Aug. 20.—Notwithstanding the low prices prevailing on honey and wax, business has not been very lively so far this season. We are having a better demand right now. The present quotations on extracted honey are about as follows: Light amber alfalfa, 3¾c; light amber sage, 4c; water-white sage, 6c; white sage, 5½c. Bees-

wax is worth about 28c per pound.

Comb honey in carload lots will probably not be ready for shipment until about Sept. 1.

HAMILTON & MENDERSON.

CINCINNATI, Aug. 19.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at \$1.75 to \$1.90 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.

THE FRED W. MUTH CO.

INDIANAPOLIS, Aug. 19.—There is an increasing demand for honey, especially comb, but at this writing the market is practically bare. New crop has not arrived yet. Best grades of extracted in 60-pound cans sell for 10@12c. No. 1 choice white comb is bringing \$4.00 per case. For beeswax we offer 28c cash or 30c in exchange for bee supplies.

WALTER S. POWDER.

NEW YORK, Aug. 19.—There is nothing new to report in regard to comb honey. Some stock has been carried over from last year which kept in very good condition, and as the season will open for new crop within the next month or so, there will be no trouble in disposing of it. There is no demand at present, to speak of, but in another month from now, the season will open and we expect a fairly good demand. We cannot tell as yet what the crop will be in the East or middle West, and it will depend on the weather during the next three or four weeks. There are no prices established as yet, and there will not be for some time to come.

Extracted honey is in fair demand, and from correspondence we are receiving right along, it is evident that a good crop has been produced throughout the South, as well as in California and the far West.

West Indian honey is also arriving freely. We quote nominal: California and far western, 5½@7c per pound, according to quality; southern, average grade, 50@55c per gallon; fancy grades, 65@75c per gallon.

West Indian, 45@55c per gallon, according to quality.

HILDRETH & SEGELKEN.

Grading Rules of the Colorado Honey- Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(All honey sold through the Colorado Honey-Producers' Association must be graded by these rules.)

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned. No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.
Honey in badly stained or mildewed sections.
Honey showing signs of granulation.
Leaking, injured or patched up sections.
Sections containing honey-dew.
Sections with more than 50 uncapped cells or a less number of empty cells.
Sections weighing less than the minimum weight.
All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W", "L", "A.", "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.
Unripe or fermenting honey, weighing less than 12 pounds per gallon.
Honey contaminated by excessive use of smoke.
Honey contaminated by honey-dew.
Honey not properly strained.

Attractive Prices ON TIN HONEY CONTAINERS

Just now there is a heavy demand for tin honey containers in Illinois and adjoining territory. A heavy fall honey flow is on. If you need cans or pails write us. We have secured cans at such figures that we can surely save you money.

Write us your **requirements** and we will give you our best prices

DADANT & SONS
Hamilton Illinois

MORE MONEY FOR YOUR HONEY

WHEN PACKED IN

LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

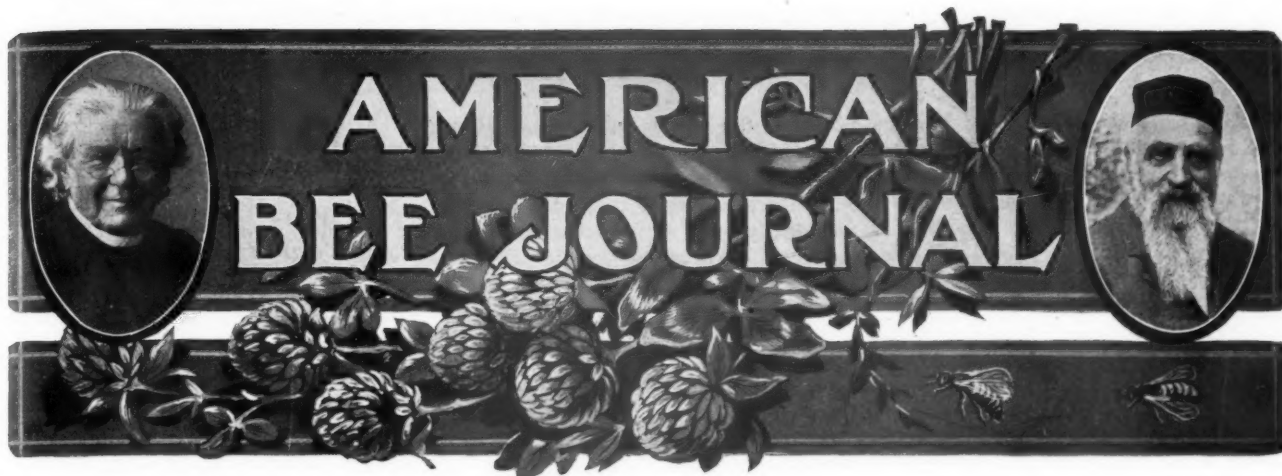
QUEENS OF "LEWIS" QUALITY

Requeen in September, the month of fall flows, with "Lewis" queens, and guarantee plenty of young bees for winter and a honey harvest next year. Bred for business, these queens are large and vigorous, and especially resistant to European foulbrood. They are reared and mated under the best conditions, and are guaranteed to give satisfaction in every respect, or money refunded without question. Better than most, and as low priced as good queens can be sold. Safe arrival and purity of mating guaranteed. Better order today.

G. B. Lewis Company, Watertown, Wisconsin, Sole Manufacturers

For sale by us and the following Lewis distributors :

CALIFORNIA	W. A. Trickey.....	Bishop
COLORADO	Colorado Honey Producers' Association.....	Denver
COLORADO	Grand Junction Fruit Growers' Association.....	Grand Junction
COLORADO	Delta County Fruit Growers' Association.....	Delta
COLORADO	Producers' Association.....	De Beque
COLORADO	A. S. Parson.....	Rocky Ford
COLORADO	Coffin & Foster.....	Rifle
COLORADO	J. Roscoe Miller.....	Montrose
GEORGIA.....	J. J. Wilder.....	Cordele
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ILLINOIS.....	Dadant & Sons.....	Hamilton
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MICHIGAN.....	A. G. Woodman Co.....	Grand Rapids
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NEW MEXICO.....	H. H. Brown.....	La Plata
NEVADA.....	H. Trickey.....	Reno
OHIO.....	Fred W. Muth Co.....	Cincinnati
OREGON.....	Chas. H. Lilly Co.....	Portland
TENNESSEE.....	Otto Schwill & Co.....	Memphis
TEXAS.....	Southwestern Bee Company.....	San Antonio
UTAH.....	Foulger & Sons.....	Ogden
WASHINGTON.....	Chas. H. Lilly Co.....	Seattle
PORTO RICO.....	Fritze, Lundt & Co. S.....	Ponce
ENGLAND.....	E. H. Taylor.....	Welwyn



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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

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EDITORIAL



COMMENTS

Does the Queen Convey European Foulbrood?

Among the questions sent me for reply came one asking how the queen conveys European foulbrood, and referring to something said by the Editor in the May number. On referring to that number I find on page 173, in a foot-note, this closing sentence: "It very probably would be insufficient in cases of European foulbrood, since this is usually transmitted by the queen." It is marked with pencil, showing that I intended to have something to say about it, but through press of other matters it escaped attention.

Like enough, if I were to meet in person the much respected Editor-in-chief of the American Bee Journal, I would ask, "How do you know?" As that is a pleasure I'm not likely to come within a hundred miles of for some time, I must use more diplomatic language, so I'll not ask that question. I may say, however, without fear of violating the proprieties, that we are none too well informed as to the actual manner in which European foulbrood is conveyed. To be sure, a few years ago a theory was evolved—perhaps I better not try to appear modest and say it was a theory of my own evolving—to account for the manner in which the disease is ordinarily continued in a diseased colony. That theory is that when a larva becomes diseased and dies, before it becomes at all putrid the nurse bees suck its juices and feed them to healthy larvae, which in their turn become diseased. To be sure, this is on a theory, but no one has yet chal-

lenged its correctness, and it serves well as a basis to account for the dequeening method of the cure of European foulbrood.

But this has reference only to the continuance of the disease after it has once made its entrance into a colony. How does it make that entrance? What's the beginning? Promptly a number of hands will be up, and the answer will be, "Through the honey of a diseased colony." I don't know that that's the wrong answer, but I'm not so dreadfully certain that it's the right one. Pretty certainly the first entrance into an apiary is through the visit of some of the bees to a diseased colony in another apiary, said visit being made for robbing.

Right here it may not be out of place to say that if there were some way by which none but capable beekeepers were allowed, there would seldom be any chance for the disease to pass from one apiary to another, for a capable beekeeper seldom allows robbing to occur.

Once introduced into an apiary, it may be spread through robbing. Likely, however, that way of spreading occurs in only a small proportion of cases. Too often it is spread by the beekeeper himself taking brood from one colony for another. It is possible that bees from a diseased colony sometimes enter the wrong hive and carry the disease with them. That does not seem so very probable when we consider that the Baldrige treatment of American foulbrood is based on the idea that bees leaving the hive go empty, and so

would not be likely to carry diseased matter with them. Of the six cases of European foulbrood that occurred in a mild form in my apiary this season, four were in adjacent colonies. June 22, a few bad cells were found in No. 93 and in No. 94. July 1, No. 95 was found affected, to be followed by No. 96 July 21. That gives color to the belief that bees may have by mistake entered wrong hives, yet it does not absolutely follow that they carried the disease in their honey-sacs. Which raises the deeper question as to just how bees carry the disease from one hive to another.

The general belief is that it is carried in the honey. Maybe so generally, maybe not always. It is not hard to believe that honey may be taken from an infected colony without disease going with it. I have fed honey from the super of a diseased colony without harm following, and it is not hard to believe that unaffected honey may also be in the brood-chamber of a diseased colony. It is possible that even where honey is taken without any disease in it, the germs may be carried on the feet of the robbing bees, and also that a bee entering the wrong hive by mistake might thus carry the germs, even with an empty honey-sac.

But this is too much in the nature of guessing, and it is much to be desired that we should have more definite knowledge. If the disease is transmitted by the queen, that can hardly have reference to its being carried from one hive to another. That it is usually transmitted by the queen after being once introduced into a colony is, I think, somewhat new, but that does not prove it is not true.

C. C. M.

The Editor-in-chief will readily acknowledge his own information is only

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at second hand while that of Dr. Miller is of a protracted nature at first hand. However, the opinion that European foulbrood is "usually transmitted by the queen" was created by two facts, as follows:

Cheshire, in his "Bees and Beekeeping," 2d volume, page 548, gives an account of the dissection of a queen from a colony suffering with foulbrood. He writes:

"The queen was alive at her arrival, and I forthwith began a dissection. Having removed the left air-sac, which lies within the first and second abdominal rings, and which was very much above the average size—a constant indication of the presence of bacilli—I came upon the ovary, of which I had previously removed many dozens. This one was abnormally yellow, and very soft, so that it was difficult to detach it from the larger external tracheæ without tearing; but a separated ovarian tube, placed under a second microscope, magnifying 250 diameters, at once showed four or five bacilli, swimming along with a lazy sort of progression. Detaching now a half-developed egg, and crushing it flat, nine bacilli were quickly counted. This was not an isolated case."

It is true that Cheshire had not differentiated between the two kinds of foulbrood. So we might ask whether this was American foulbrood or European foulbrood. But it is well-known that in thousands of cases of American foulbrood the queen has never been known to transmit the disease. Now let us refer to the April number of the American Bee Journal, page 128. My son, M. G. Dadant, reports experiments upon an apiary in which 51 colonies were treated for European foulbrood. "In three cases, very prolific queens from diseased colonies were given to healthy weak colonies, either queenless or in which the poorer queen had been killed. Every one developed European foulbrood."

This introducing of queens from diseased colonies was done at my suggestion, because of Cheshire's statements, and also because it has been shown that in some cases the supplying of a healthy queen is sufficient to arrest the disease.

However, I am very free to admit that it is very probable that Dr. Miller is right in his contention that "when a larva becomes diseased and dies, before it becomes at all putrid the nurse bees suck its juices and feed them to healthy larvæ, which in their turn become diseased."

We are very much in the dark yet concerning all these matters, and we must keep on theorizing until some one discovers the exact facts and just how much there is in either the queens, the brood, the combs or the

honey, in the transmission of disease. But it already looks very probable that there is no danger lurking in the honey with European foulbrood, while it is principally there with American foulbrood. Queens need not be changed in American foulbrood, but their removal is often necessary in European foulbrood.

We keep our columns open for further discussion of all these points.

C. P. D.

Managing Straw Skeps for a Crop in Modern Frames

A French lady beekeeper of considerable experience, Madeleine Maraval, tells in the "Abeille Bourguignonne" of August, how she succeeds in getting the honey crop of her colonies in straw skeps stored in movable-frame hives. She owns colonies in both skeps and movable frames. She proceeds as follows:

"My aim is not to increase the number of colonies, but to secure as much honey as possible. During April, after the spring visit I begin to move each of the colonies in straw skeps in the direction of a good colony in movable-frame hive, a little, each evening, after the flight. In this way each well developed colony on frames has near it, after awhile, a straw skep, with the entrances as close together as possible.

"At the opening of the honey crop we are ready for the juggle. I proceed with it as soon as the skeps are found heavy enough to be safe, by removing each skep to a new spot, in the middle of the day, when the big crop is on. There is a great flurry among the poor honey gatherers when they come back heavily loaded and fail to find their home in its place. But the flutter is of short duration; the neighbors are very accessible to those who come loaded. There is hardly a half hour of excitement and the adoption is consummated to the benefit of the movable-frame hive which thus doubles the number of its field workers and trebles its crop.

"As for the straw-skep colony, the only thing expected of it is to gather sufficient stores to live until the next year, when it will be made to *sulk* again."

Smell Organs of Coleoptera

We are in receipt of a study on the "Olfactory Sense of Coleoptera," by N. E. McIndoo, of the Bureau of Entomology of Washington, D. C. This work was published by the "Biological Bulletin" in June. Mr. McIndoo is the scientist who wrote an article on "The Sense of Smell of the Honey Bee" in the American Bee Journal of June, 1914. His conclusions in the present study are the same as those reached by him before, that the sense of smell is not located in the antennæ of insects



AN APIARY IN WILLOW SKEPS WITH STRAW ROOFS IN THE HEATHER DISTRICT OF SOUTHERN FRANCE;

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as generally believed, but in smelling pores located at the base of the wings, legs and other parts of the body. The scientific and thorough manner in which Mr. McIndoo's experiments, anatomical studies and statements are made entitle him to serious consideration, even though it may compel the radical change above mentioned in the accepted views of entomologists.

Our Own Crop

As stated in some of our previous numbers, the season of 1914 was the poorest one we have had in all of our beekeeping experience. Bees went into winter quarters in a very weakened condition, although we fed our 500 colonies something over 7000 pounds of granulated sugar, made into syrup. In spite of the fact that we wintered out-of-doors, and that about 75 percent of the colonies covered but six to seven brood-frames, our winter losses were considerably less than 10 percent.

The spring of 1915 opened up early, and pollen came in freely, so that the bees built up very rapidly until fruit bloom began. Although they were weak in numbers during fruit bloom, they gathered quite a quantity of honey, so that very weak colonies built up to good strength by the time fruit bloom was well over. Then came two months of the worst weather we have ever experienced. Rain and cold continuously, and as the colonies were strong their stores ran out a few days after the apple bloom ceased. Had we not given them plenty of help in the way of feed, we would no doubt have lost 50 percent during the months of May and June.

Sweet clover began to yield here about June 20 to 25, and the bees took a new lease on life. Brood-rearing began again, and colonies that were at the point of starvation soon began storing honey in good earnest. There was no white clover.

The summer rains have prevented farmers from working in their corn-fields, and every cornfield in the neighborhood is literally covered with heartsease or persicarias, and there will later be a heavy bloom of Spanish-needle. At the present writing (Aug. 17) bees are making rapid headway, and our colonies average not less than two supers per colony, with a prospect of three or four weeks of flow ahead of them. Just now, we are very busy with the seven apiaries, keeping ahead of the honey flow; but luckily, we have plenty of empty combs, so that it is little trouble to keep down swarming. To date, we have had, to our knowl-

edge, about seven swarms from the 550 colonies, and this without depending upon any method of keeping down swarming except raising the hives from the bottom-board in front and keeping plenty of room above.

Of course, a cold wet fall would ruin our prospects, which are so bright, but we are hoping for good warm weather and a late frost, with occasional rains to keep the bloom coming in good shape. Prospects for next season are immense, when looked at from this angle. The ground is covered with young clover, which should give us plenty of bloom; in fact, more white clover bloom than we have had for eight or ten years past.

Accident to J. E. Pleasants

Through a California paper sent by one of our subscribers, we learn of a painful injury to our California department editor, Mr. J. E. Pleasants. The article reads as follows:

SANTA ANA, Aug. 14.—Trampled and gored by an angry bull, J. E. Pleasants, 77-year-old bee inspector, was saved from death today by the daring of his

wife, who fought off the enraged animal with a pitchfork.

The attack occurred at Pleasants' ranch in the Santiago canyon, and took the aged inspector by surprise. Mr. Pleasants was struck forcibly from behind, knocked to the ground and was being gored and trampled when Mrs. Pleasants ran from the house.

Crying to her husband to be cool, Mrs. Pleasants snatched up a heavy pitchfork and attacked the bull. Time and time again the sharp forks entered the animal's nose, bringing bellows of rage and renewed attacks on the prostrate man.

Finally Mrs. Pleasants summoned her strength and plunged the weapon into the animal's neck, driving him from her husband, who was found to be fearfully bruised.

The injured man was assisted into the ranch house and given first aid treatment. Later it was announced he would recover.

The bull was ordered killed.

We trust that Mr. Pleasants may recover quickly from his injuries so that he will be able to resume his work with the bees. We happened to have some contributions and pictures from him still on hand, so that the department will appear as usual in this number.

MISCELLANEOUS



NEWS ITEMS

Ontario Beekeepers' Association—White Honey Crop Report.—The Crop Report Committee of the Ontario Beekeepers' Association met on Aug. 4. Three hundred members reported from all parts of Ontario, showing an average of 55 pounds per colony. There is about an average crop, and the quality is excellent. The buying power of the public is below the average, however, and it is likely that prices will range slightly lower than those recommended by the committee last year. In fact, some honey has already changed hands at prices recommended below.

Selling should be brisk at these prices, as the market is clear of old honey and the high price of sugar is causing householders to turn to honey as a substitute for canned fruit; considering that it requires no preserving but can be stored in a dry place regardless of temperature without even removing it from the tin. One case was reported where berries were allowed to waste, and 60 pounds of honey purchased to save the expense of picking and canning the berries.

The prices recommended by the committee are as follows:

No. 1, light extracted, wholesale.....	10 to .11½ per lb.
No. 1, light extracted, retail.....	.12½ to .15 " "
No. 1, comb, wholesale..	\$2.00 to \$2.75 per doz.
No. 2,	1.50 to 2.00 " "

These prices are f. o. b. in 60 pound, 10 pound, and 5 pound tins; the former

being net weight with the tin thrown in, the two latter being gross weight. The difference in time and trouble of filling the small tins about equalizes the price. In selling to the wholesale merchant the lowest wholesale price should be asked; while the retail grocer should pay the highest wholesale price. The retail price to the consumer might vary according to the quantity he takes in any one purchase, and whether he supplies his own package.

Signed by the committee:

WM. COUSE,	W. J. CRAIG,
H. G. SIBBALD,	MORLEY PETTIT,
	Sec.-Treas.

Fox River Valley Beekeepers.—I was at Aurora, Ill., July 28, and had the pleasure of attending the meeting of the Fox River Valley Beekeepers who organized on that date. This bids fair to be one of the best, if not the best and largest beekeepers' association in the State outside of the Illinois Beekeepers' association. There are many beekeepers in the valley.

American foulbrood has made its appearance for some time in this valley and the beekeepers have made up their minds to get rid of it. I spent the greater part of the week among them inspecting and instructing. They expect to meet every two or three weeks during the fall and winter to post themselves and to gather together as many

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members as possible.

My bulletins are at last printed and will be forwarded as requested. The bees have been working quite well since July 1. Basswood gave them a little start and sweet clover is holding on well. The rains are making the prospect good for a fall flow of honey.

Putnam, Ill., Aug. 2. A. L. KILDOW.

Demonstration at Minnesota Fair.—

Fifteen tons of honey from the apiary of Emil Hoffman, of Janesville, Minn., owner of 700 colonies and one of the largest apiary establishments in the northwest, are to be used in a novel extracting demonstration at the Minnesota State Fair Sept. 6 to 11, as a result of arrangements just perfected by P. J. Doll, of Minneapolis, superintendent of the apiary department.

The demonstration will be conducted in the Apiary Building during the entire week of the fair. Its purpose will be to show the public how honey is handled on its way from the hive to the table, and give the 50,000 bee fanciers of the northwest an opportunity to study latest methods. Students from the Minnesota Agricultural College, specializing in bee culture, will do the work. Each day the students will be under the supervision of a different bee specialist of established reputation.

The exhibit of honey at the fair this year will be twice as large as any preceding one. All exhibit space has been taken, and applications for space have been turned down for nearly two months. This extraordinary interest

is due not only to the rapid growth of the bee industry in the northwest, but to the large crop of honey that is being harvested.

Early in June it was believed that the almost continuous rainy weather would seriously interfere with the honey harvest. Along with it, however, there was a lateness of season that tilted the bloom over into late July and August, after it had commenced to clear up, and an enormous crop resulted for the most part.

The Apiary Building has been remodeled throughout to handle the big exhibit anticipated. At the present time it is in better shape than it has ever been, and located as it is one of the most popular parts of the vast Exposition Grounds of 350 acres, and is certain to attract much attention this fall.

Last Call for the Field Meet at Hamilton.—Don't forget the dates of the two big summer meetings of beekeepers of the middle West. On Sept. 7, will be held the joint meeting of the beekeepers of Iowa, Illinois and Missouri at the Dadant apiaries at Hamilton, Ill. You will meet many of the prominent beekeepers of the country, see the Dadant foundation factory and their large apiaries.

You will be shown the big dam across the Mississippi river, which is one of the biggest engineering enterprises of the century. Above all you will combine a summer vacation with profitable discussion of the latest phases of beekeeping.

On Sept. 8, at Keokuk, Iowa, will be held the conference of bee inspectors where problems of bee disease and their control will be discussed by the men whose business it is to use every means to control the spread of foulbrood.

Two big meetings coming together, a visit to the Dadant apiaries and the big dam offer a combination of attractions that should be hard for a beekeeper to resist. We expect a good attendance and a splendid time. Don't forget the dates, Sept. 7 and 8.

FRANK C. PELLETT.

[The beekeepers who intend to attend the Hamilton field meet are requested to inform the American Bee Journal or Dadant & Sons by postal card in order that we may make proper arrangements to entertain them, as the Dadant apiary is over 2 miles from the railroad station.]

Polk County, Iowa, Field Meet.—On July 14, at the home of Mr. Harris, about a mile north of Des Moines, was held the second field meeting of the Polk County Beekeepers' Association.

The morning was occupied by a general discussion, and at 12:30 p.m. the tables were spread for the large gathering. Following the dinner a short program was given. Prof. Pammel, of Ames, discussed the "Honey Plants of Iowa," and Prof. Bartholomew also gave an interesting talk. Mr. Slinker, of Des Moines, talked on



THE GROUP IN ATTENDANCE AT THE POLK COUNTY PICNIC

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The Shaking Treatment for Swarm Control."
D. A. DAVIS,
Deputy State Inspector.

Something to Do.—"What has become of the Cheerful Idiot?" asked the Old Foggy. "I haven't heard of him for months." "Why, he is busy with a get-rich-quick scheme," replied the Grouch. "What is it?" asked the Old Foggy. "Some one told him that a queen bee lays 3000 eggs a day, and he is trying to perfect a cross between a queen bee and a hen."—*Cincinnati Enquirer.*

The Ohio Field Meet.—The Ohio Beekeepers' Association held its second field meeting at the apiaries of Fred Leininger & Son and J. H. Allemier, of Delphos, Aug. 4, 1915. The first field meeting of the association was a two-day meet at Medina, Ohio, last summer.

Inclement weather on the previous days and threatening weather on the day of the meet reduced the attendance. In spite of the weather about 150 attended.

At the home apiary of Mr. Leininger, demonstrations in queen-rearing were made and general manipulations carried out.

After dinner the visitors were taken to one of the out-yards where the general manipulations and the processes of queen-rearing were repeated. Live bee demonstrations, consisting of filling hats with bees, shaking bees over their heads and placing them in their mouths, were given by D. H. Morris, of Springfield, one of the Deputy State Inspectors, and by A. A. Doenges, of Defiance.

During the whole day, as chilly as it was, everybody walked freely among the bees and not a veil was to be seen.

At the same yard a talk was given by Mr. E. R. Root, of Medina, on "Live Bee Demonstrations," "Sweet Clover," "Wintering Bees," and "This Season's Honey Crop." Mr. Root believes one of the coming ways of wintering bees is in tenement winter cases. Mr. A. C. Ames, a State Inspector of Peninsula,

gave a talk on the tenement winter case.

Mr. F. L. Webster, a prominent banker of Van Wert, gave a talk on sweet clover as a forage crop. In his talk Mr. Webster stated that a man in his vicinity pastured 65 head of cattle on 20 acres of white sweet clover last season, and sold them with a net profit of \$970. This year the farmer is going to harvest the seed and expects to receive a nice return from it. He said the farmers in that vicinity are planting large acreages of it now.

A panoramic picture was taken of the beekeepers at this yard, after which they returned to the apiary of Mr. Allemier. Here they listened to an interesting talk by F. W. Summerfield, of Toledo, on his experiences at moving bees to Florida during the winter and back in the spring.

Mr. Root said that those who wanted to keep bees should not leave Ohio, especially the northwestern part of the State.

At the close of the meet a vote was taken which was unanimous in commending the work of N. E. Shaw, State Entomologist as head of the inspection in the State.

It is the intention of the association to hold a greater number of field meets each year in various parts of the State as time goes by. The association is preparing an exhibit for the State Fair, at which will be given out a list of all paid up members and their addresses, and if any have honey for sale this will be indicated together with the quantity and kind.

E. R. KING, Sec.

Creola, Ohio.

National Beekeepers of New Zealand.

—In New Zealand they are pushing to get a market, and it is noticeable that a good share of the changes proposed in their constitution at their last meeting, held recently, have to do with the marketing end of the business.

Some of the changes proposed are, to create a defence fund for the protection of members, to act in conjunc-



A BEE CAUGHT BY A SPIDER SMALLER THAN ITSELF.
Courtesy of Dr. A. J. Hocking,
Crystal Falls, Mich.

tion with the Cooperative Honey Producers' Association to get a better price for honey, to urge that the registration of apiaries be brought into force as soon as possible, and to insist that honey be carried on the railroads at the same rate as butter.

We find the familiar name of our old friend Isaac Hopkins on the program.

Yakima Valley Pioneer Dies.—Legh Richmond Freeman, editor of Freeman's Farmer for years and one of the pioneer beekeepers of the Yakima Valley of Washington, died at North Yakima on Feb. 8, 1915.

Mr. Freeman has the distinction of having brought into the Yakima Valley the first colony of bees in a movable-frame Langstroth hive. It was he who first advocated the organization of the Washington State Beekeepers' Association, and it was partly due to the publicity which he gave this association that it so early took rank as one of the leading beekeeping associations of the country.

New Jersey Field Meeting.—The New Jersey Beekeepers' Association will hold a field meeting in the apiary of R. D. Barclay, of Riverton, on Sept. 16, when live topics will be discussed.

E. G. CARR, Sec.-Treas.

H. Root, Pres.

Who Owns the Bees?—A Legal Question.—Last Thursday, July 15, a swarm of bees escaped from Chris Anderson's apiary. Dave Reese saw them flying over Mr. Dickinson's lot and threw dirt among them, which so confused



THE CHILDREN AT THE POLK COUNTY PICNIC

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them that they alighted on an apple tree on the lot where C. L. Dersch lives, on a limb that hung over on the Dickinson lot. R. L. Joiner hived them in a hive furnished by Judge Jenks, on the Jenks lot. They are now gathering honey from all lots in town, and from Woodbury's pasture. The question is who owns the bees, and who is entitled to a share in the honey that they gather? Judge Jenks claims that Reese is out of it because he went off and left them. That Dersch is disqualified as claimant because the limb hung over the Dickinson line. That Joiner has no claim because he brought them over on his lot. That Anderson did not follow them, and any one had a right to reduce them to his possession.

All the other interested parties claim that the Judge is an interested party,

and, therefore, has no jurisdiction in the case. When Judge Thompson gets home from his furlough, the question will be submitted to him, and as the question is a knotty one, it is likely the honey will be all gone by the time he renders a decision.

Illinois Field Meets. — Immediately following the field meet at Hamilton on Sept. 7, there will be one at Rockford, Ill., on Sept. 10. Among others, State Inspector Kildow, President Baxter, and a member of the American Bee Journal staff are expecting to attend. All beekeepers who can arrange to do so are urged to attend.

Plans are being formulated for a field meet at St. Anne, Ill., on Sept. 15.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

A Beginner

I am sending a picture of me taken a few days ago, holding a frame of brood and bees. Mr. Moore and I are very much interested in bees. The picture was taken one afternoon when my husband and some of his beekeeping friends were holding a bee convention in the backyard. We were examining



ANNA L. MOORE EXAMINING ONE OF HER COLONIES

a colony to look at the brood.

We live in the city and do not have very much room for them, but none of the neighbors or myself have been stung as yet.

We are having plenty of rain and look for a good fall crop of honey. I am very anxious for the time to come when I have the privilege to sell my first section of honey.

[MRS.] ANNA L. MOORE.

Decatur, Ill.

You will probably find that people

will prefer your honey to any shipped from a distance no matter how good that may be, at least it is so in this locality, and of course you will be interested in the bees if you are to have the money for the honey.

The Stingless Bee

BY CELIA BALDWIN WHITEHEAD.

Of honey I am very fond;
I'd like to keep some bees
To gather honey all the day
From off my flowers and trees.

I'd love to see them spread their wax
And skillful build each cell,
And labor hard to fill them up
With what I love so well.

But bees have stings, and I'm afraid
To venture near a hive;
If I should get amongst a swarm,
I'd ne'er get out alive.

But nowadays we've many things
With "less" attached thereto,
We've fireless cookers, hornless cows
And boneless codfish, too.

The wireless telegraph reports
The cryless babe enroute,
The iceless soda fountains flow
And hoseless wagons toot.

The seedless orange grows apace.
The thornless roses bloom,
The headless ballot prophecies
The grafters graftless doom.

The painless dentist pulls our teeth,
With flourless bread we're filled,
We're carved with knifeless surgery
With smokeless powder killed.

With all these lessons in the art
Of making thingless things,
Why can't our geniuses produce
Some bees that have no stings?

What joy I'd take to walk about
Beneath my shady trees,
And gather in the luscious sweets,
Produced by stingless bees.

Denver, Colo.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Keeping Bees

Perhaps nothing is a source of more entertainment to one's guests than opening up a hive of bees when they can be convinced there is little danger of being stung. We have a few hives in the garden near the house, with the hollyhock background, so picturesquely suggested by Mrs. Comstock in her "How to Keep Bees." These have become quite docile from association and frequent handling, and serve as a source of interest and amusement to many comers. The great desire is always to see the queen.

European Foulbrood

We have had an epidemic of European foulbrood in our county this year, in spite of our efforts to keep it out. That, of course, has had something to

do with our light crop. Now that the honey flow is drawing to a close and we are getting our bees in shape for the fall, just a word to the beekeepers of infected apiaries.

The disease has disappeared to a great extent during the honey flow. But do not be misled by this. It will appear again in the winter. Almost sure to unless you have requeened with good young queens. So, if you have not done so, now is a good time to safeguard your apiary by requeening as thoroughly as possible with good young Italian queens. While it is not claimed that Italians are entirely resistant, I think the experience of all bears out the theory that this is uniformly the most resistant race, and I believe now the preference is being given the leather colored.

All who are in doubt should read Mr. Pettit's articles in the American Bee Journal on experiments with dif-

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erent races. Of course, good strong colonies of any race may be resistant, but unless one has the time and opportunity for personal experiments it is well to heed our leaders in the profession who have. They are giving their labor and time for the benefit of all, and may save us much valuable time. It is a good time to get queens now if done at once, as they are cheaper than early in the season.

Auto Trucks for Honey

Perhaps no State in the Union uses more automobiles than California. In fact, some think we run to extremes here in that line. Auto trucks are now used a great deal for moving both honey and bees. While I am a great

lover of the horse, and do not like to see them altogether replaced by machines for pleasure driving or even draft work, it seems to me that this is a line of work in which the machine especially shines. The distances are usually great from out-apiaries to market, also the rapidity with which bees can be moved from one locality to another is of course a great advantage. One must have a reliable machine, a careful driver, and a heavy load, however, to make everything go satisfactorily.

The snapshots of truck load of our honey on its way to market shows a characteristic California scene during the honey harvest. The auto truck never gets stung, though the driver may on some of our mountain roads.

and shipped, but at these places there was just a little nectar and pollen coming in, and the apiarist was busy requeening. In some places the flow was just coming on and the apiarist was busy supering and doing general apiary work. In other places the flow was passing off, and hauling and packing honey was the order of the day. At some places I found the apiarist off on a vacation, and at other places I found him on the banks of a near-by stream fishing and having a good time. At other places they were getting up and going to work at 3 o'clock in the morning.

Well, it was a great trip which I enjoyed, and the more, too, when I found the business everywhere in the very best condition. I am exceedingly proud of my business, as every one should be who has found his natural calling and is following it.

Wants to Come Back to Dear Old Georgia

"MR. WILDER:—I am going to try to get back to my old home country (Georgia) this fall and beekeeping is my aim. I want to ask you which portion of the State is preferable for this purpose, the southern or northern? Any information will be appreciated. I have been here in Wood Co., Tex., for a number of years."

Quitman, Tex. W. M. BLACKWELL

Mr. Blackwell, doubtless you are not aware that I also wish to return and roam over some of the old ground of my boyhood days, and I wish we could just exchange places for awhile, for I spent my boyhood in great Texas; yes, and in Wood county at that. We first got interested in bee culture in your county, and established our first apiary there and contracted a "bee fever" that will last through life.

Southern Georgia is a level country, and some of it is what we would call low, so much so that it is worthless for agricultural purposes, being covered frequently with water, and in many places it is malarious, and no one can live there and enjoy good health; chills and fevers soon overtake one, and he will lose all energy. In many such places beekeeping would pay well, and perhaps better than elsewhere in Dixie. But to live there and enjoy good health is impossible. The higher and better settled portions of south Georgia are not quite so good for beekeeping, but health is better.

By knowing the country and the various honey plants, one can pick out a choice location and do well in beekeeping, if it is properly followed. But as a rule a new comer into our territory meets with failure, quits beekeeping and follows something else or pulls up and moves away. This has so often occurred that we dare not advise any one to move into our country and engage solely in beekeeping.

While I have succeeded very well here, it was done under very trying circumstances, such as not many would care to come under. The same thing might be said of the northern portion, but the general health of the people is far better for side lines, such as poultry, fruit growing, trucking, stock raising, etc., which are most desirable for



SHOWING THE QUEEN TO THE VISITORS

BEE-KEEPING IN DIXIE~

Conducted by J. J. WILDER, Cordele, Ga.

A Trip Over the Business

It is the greatest desire of many of those who have joined our ranks as beekeepers to bring their business up to a point where they may be numbered with those who succeed and take a peep at life on its pleasure side. Leaving luxury out, I have reached such a point and know how one feels when he can count his colonies by the thousands. It is not so much being comfortably situated in life and having a bank account as having good business relations who love the business as I do and take interest in it. They are just as eager for improvements as I am when it comes to increasing the number of colonies.

The honey crop or prospect of one is a matter of importance to us. All

the time spent at an apiary is taken up. Every member of the family is glad to see us and do everything for our pleasure and comfort they can, which makes the time spent at each place a source of great pleasure. There is nothing better in life than pleasant business relations to the enterprising or progressive business man.

On Aug. 1, I left my summer cottage up in the mountains for a hurried trip over my business, beginning at Cordele, Ga., and ending at Ft. White, Fla., which are the extreme points of my business and 200 miles apart. Between these two branches I have five other apiaries, and the main sources of honey differ at each one and come at different seasons of the year, from March 1 to Nov. 15. In some places the main flow was over and the honey was all off

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side issues to our line of business; while at the same time beekeeping can be carried on there as a sole business successfully if properly managed and enough property invested in it.

Something About Sections

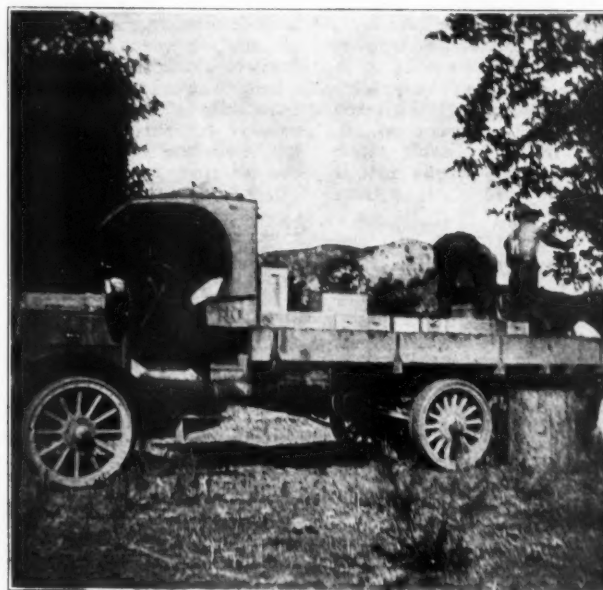
For a number of years we have been using all the regular sized sections as sent out by our manufacturers, namely, $4\frac{1}{4} \times 1\frac{1}{2}$, $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$, $4 \times 5 \times 1\frac{3}{8}$ plain, and $4\frac{1}{4} \times 1\frac{1}{8}$ —2 beeway in the comb-honey part of our business, and we have kept close watch of results in point of production and marketing, and it has been our experience that we can get more plain sections filled than beeway, and just a little more honey stored, all told, not weight, but the bad feature (especially since the net weight law came about) is that they are not so well filled; the comb is not nearly so well attached to the sides of the sections, and it is "pulled" away from the wood and they do not make good shippers. They look "scant" to the consumer, and they do not sell as well; in fact, there is no sale for them on certain markets.

The leading object in putting out a "tall" section was to "stretch" the contents out and make it appear larger and more attractive to the buyer, but in this it has been a failure. Besides here, where comb honey is subject to the ravages of the lesser moth from the time it is removed until it is consumed, it is almost impossible to keep it for any length of time, and it must be consumed in a short time after removal. The comb surfaces come so close together after it is packed that it makes a good harboring place for the lesser moths, which make many passages between the sections of honey and plow up the cappings until they are soiled, and in most cases the honey will ooze out. Such is not the case with the beeway section. Then, too, the surface is not so well protected from handling and wrapping as in the beeway. So there is no style or size so good as the regular standard beeway $4\frac{1}{4}$ open top and bottom section.

Requeening

It is surprising to know how fast beekeepers for the last few years have learned the importance of requeening their bees. Queen breeders, as a rule, are overrun with orders most of the time, so much so that they cannot be prompt in filling orders, and dissatisfaction arises from time to time among those who have to buy queens.

Notwithstanding there are many more queen breeders in the field than formerly, and those all the time greatly equipping and increasing the output of their business. The beekeeper who has never tried requeening may entertain a doubt as to whether it pays, and may refrain from doing so. There is no doubt about its paying, and the opportunity time to do it is before winter. A colony with an old queen in the fall is drifting towards a weakling or worthless colony for next spring, simply because the queen has passed the best period of her usefulness and fails to



LOADING THE TRUCK

lay eggs sufficiently to keep up the colony. Take her out and introduce a young one and note in a short while the change in the activity and strength of the colony; the brood-nest has been greatly widened out and the field force greatly strengthened. Pollen and nectar from fall flowers are coming in, and the colony gets into good wintering condition, and will gather a honey crop next spring. So returns from investments in good queens begin at

once and continue for two years, as a rule. This is a good investment. Try it on the weak colonies in your apiary or those which seem to be drifting downward, and in this way make of them your very best colonies. Change your stock if you are not pleased with what you have and are not reaping good results. The good queen-breeder will stand back of the stock he sends out and will make good your losses so far as stock is concerned.

CANADIAN



BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Confusion in Names

We often hear that beekeeping and poultry keeping combine nicely as a business, but it has remained for Mr. Pettit, our provincial apiarist, to bring this combination to a fine art.

A Mr. Inglis, from Rainy River, asks in the August number of the Canadian Beekeeper, how to control swarming, and also states that in the north country comb-honey production is not profitable. After giving Mr. Inglis some pointers on swarm control, Mr. Pettit has this to say about comb honey production in northern localities: "The trouble with comb-honey production where there are cool nights, is that the supers cool off so that the *hens* have difficulty in working the wax." The first thing Mr. Pettit knows he will be deluged with letters from poultrymen, offering stock guaranteed to work in any country no matter whether nights are cool or hot.

A Short Cut

As one grows older in apiary work, short cuts will be taken advantage of

that, in earlier days, would not have been thought of. For instance, yesterday while at one of the out-yards I thought it better to examine a number of colonies to see whether young queens that had been hatched were laying. As I was about to lift off the super of the first of these colonies, I happened to think that for about ten days not a bit of nectar had been gathered, and for this reason probably the drones might be having a hard time of it in colonies where a young fertile queen was established. Sure enough on looking at the entrance a bunch of drones probably 20 in number, were huddled up at one corner of the hive.

No use to examine that hive, for that was *prima facie* evidence that there was a fertilized queen inside. The same examination showed like conditions at other hives, and I was thus saved a lot of work at a time when bees were none too nice to work with. This test is a good one for fall, if one has not the time to examine all colonies now, as after the honey flow is all over and cool weather comes along, it is a pretty sure sign that something is wrong if any great number of drones are still

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A THREE-TON LOAD

tolerated in a hive.

Crop Conditions

Ontario has a fair crop of white honey with prospects good for a medium crop from buckwheat if we get some fine warm weather soon. There are many acres of buckwheat with too much rain at present. Basswood yielded well in some places and little in others, although the bloom was abundant and weather seemingly perfect.

In our locality it gave a spurt for three or four days, and we have more basswood honey than we have had for eight years. In the north yard we thought all buds were frozen by late spring frosts, but we found that the tops of the trees were all right, and that on ridges a mile or more from the yard the buds also escaped. As a result, we got a nice flow from that source which helped to round the crop out nicely.

Sales seem to be fairly good despite war conditions, and many have sold their entire crop at a fair figure. Bees are in good condition at present and should go into winter quarters in fine shape if we get a flow from buckwheat.

Much Rain—Good Prospects

These notes are being written on Aug. 11. For ten days previous to this date many parts of Ontario, including our own district, have been visited by torrential rains that have done great damage to farming and more or less to beekeeping. Everywhere the ground is soaked like in early spring and streams are at high flood. All this excessive moisture, while doing damage for the present, undoubtedly means lots of clover for next year.

Alsike and White Clover

On page 273, Frank C. Pellett in describing the two plants, alsike and white clover, hardly does justice to the

first named clover, if our locality is to be taken as a criterion for the clover sections in general. He rightly says that alsike probably yields as regularly as any honey plant, but he says nothing as to the quality of the honey. In the next paragraph he says that the honey from white clover is generally considered the finest honey that goes to the market, and that it always brings the highest price. If there is any difference in favor of white clover honey as compared with alsike, we have yet to notice it here, and as a general rule

the alsike is far more dependable for a crop than is white clover.

As we have said before, the majority of locations in Ontario that are now fair, would be very poor places for extensive beekeeping if all our alsike should disappear and we had to depend upon white clover alone. White clover is a splendid honey plant, but for Ontario at least alsike is still better, and the honey from it is at least as good as white clover honey, and that means that it is good enough for the most fastidious sampler.

Sweet Clover for Honey

With more or less skepticism I note Mr. Pellett says that sweet clover, "being one of the surest plants to yield nectar, the man within its reach will seldom face a failure." Judging by recent reports from Kentucky, where there is such a large acreage of sweet clover, it looks as though it quite often fails to yield bountifully. There is something about sweet clover, be it odor or another factor, that makes the plants very attractive to bees, but I maintain that, as a rule, it is a very slow yielder of nectar.

On the outskirts of Toronto there are hundreds of acres of sweet clover, yet after the white and alsike clovers are gone, although the sweet clover is yet blooming profusely, very little surplus is stored. I have noticed this several years, and have often interrogated beekeepers in this district. I have yet to hear of much of a yield from sweet clover. Some of them tell me that it keeps the bees out of mischief and is good to encourage late brood-rearing, but as a surplus yielder it has never done much up here.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Indications of a Flow

The outside indications of a good honey flow are not so easily determined as one might think. Can one tell a fast flow from a slow one by outside indications? By careful watching I think it is possible. The manner in which the home-coming bees alight at the entrance is one of the best criterions. The speed with which outgoing bees take flight is another one; the outgoing bees seem to be in a hurry to get somewhere. The general flying of the bees in the apiary will indicate somewhat of the character of the flow. If the apiary has the fragrant odor of the alfalfa or sweet clover bloom this has a significance. In a slow flow I have never noticed the odor of the nectar-bearing flowers in the apiary.

The manner in which the bees work upon the bloom also means something. When sweet clover is very fragrant and the bees are not too thick upon the blossoms, the indications point to a

good flow. When sweet clover bloom is literally swarming with bees, it indicates a shortage of bloom for the colonies in the district. Alfalfa is never seen swarming with bees, but the presence of bees apparently working leisurely upon the blossoms is a good sign.

Use of Honey in Cooking Tested by Agricultural Colleges

The use of honey in cooking is going to receive a stimulus in Colorado very soon. Over a large part of the State honey is now cheaper than sugar, and its superiority for baking and preserving fruit is being found out more and more. It is important that the limitations of honey for this purpose should be thoroughly understood so that disappointment will not result.

As a general proposition dark strong honey can be used for baking purposes. For preserving fruit the fruit flavor is desired, and a mild flavored honey

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should be used. By keeping these in mind the housewife will have good results from the use of honey.

A honey can specially adapted to contain the cooking and preserving honey, should not be larger than two-gallon capacity, and should have a large opening sufficiently large so that the honey may be either poured out or dipped out with a large spoon. A wood-jacketed can may be sent by parcel post, and with a large round screw cap is admirable for cooking and preserving honey.

If our darker grades of honey can be put up and disposed of as cooking honey, we can find a market that has not been open to us heretofore. This will also help keep inferior honey off the market as a table article, where it is an injury to the trade. Let us have some "cooking honey" and "preserving honey" labels gotten out and begin a little publicity along this line.

The Home Economics department of the Colorado Agricultural College have taken up this subject of the use of honey in cooking and preserving, and when the ladies in charge have tested out the use of honey sufficiently we expect the results to be taken direct to the people through the Extension Department and the County Agriculturists. Perhaps yet Colorado will develop the home market to the extent that our product will be mostly consumed within our borders.

Honey Harvest and Prices

Weather has been reported cool in Idaho early in August, and apparently the flow has about ended there with a fair yield. The Colorado crop has not yet been secured, but some honey is being taken off, and if the flow lasts through August we can get a little surplus yet.

The season still continues to be about one month late, and with a late fall the late swarms will fill their hives. Swarming has not amounted to much

this year, the increase will not make up for the last winter's loss in most localities.

Honey is in better demand locally than common, especially extracted honey. Comb honey is selling at \$3.50 to \$4.00 a case direct to the retail gro-

cers, but this price will drop as soon as a larger amount of honey is taken off. Extracted honey retails at 10 to 12½ cents, and wholesales at 8½ to 9 cents. As soon as more extracting is done the price will hardly go above 8¾ cents in a wholesale way.

CONTRIBUTED



ARTICLES

Sweet Clover

BY J. E. CRANE.

THERE has been a gradual decrease in the honey-producing flowers of our northern and northeastern States during the past 50 years. There is doubtless more honey produced than 50 years ago, but it is owing to the greater intelligence and enterprise of beekeepers, rather than the greater supply of honey-yielding flowers. The destruction of our basswood forests by lumbermen has set us to thinking as to whether, if other sources fail, we may not be driven out of business. Had not alsike clover been introduced some 50 years ago, I fear many of us would already be out of business.

The great value of alsike clover leads us to ask if there may not be other plants of value alike to the farmer and beekeeper. Crimson clover has been introduced that is equally valuable to farmer and apiarist, but it is too tender for our severe northern winters. Sainfoin, too, has been introduced, but does not seem to make much headway. Hairy vetch is another candidate for our consideration, but so far does not seem as promising as some others. Buckwheat is helpful in certain localities, and on certain soils, but is a flat failure in others. Alfalfa has proved a great success in the far West, but east

of the Mississippi river has, so far failed to yield much nectar.

It is now 45 or 46 years since M. M. Baldrige, of St. Charles, Ill., called the attention of beekeepers through the American Bee Journal, to the value of sweet clover as a honey yielding plant. This was not new, for its value has been recognized for thousands of years. But such a plant was not likely to prove useful unless it could be brought into general cultivation. Of its value for forage for hay and pasture no one seemed to know until quite recently. I wish to call attention to other quantities that commend this plant to all who are interested in its cultivation.

The northern and northeastern States are especially subject to drouth, as well as those of the West. Next to alfalfa, sweet clover can endure drouth, when our old clovers or grasses would be almost a complete failure. Not only can it endure drouth, but with its strong long tap roots it fills the soil with humus, and as they decay it will absorb water like a sponge, and retain it for the use of succeeding crops. The large amount of humus furnished by these roots improves the condition of the soil, fitting it for the growth of future crops.

I met in Florida two years ago a party from Kentucky, who told me that one county in that State, formerly considered the poorest in the State, was now considered one of the best through the free use of sweet clover, so greatly had the mechanical condition of the soil been changed, by the cultivation of this plant. While the seed of sweet clover does not seem to germinate as readily as that of alfalfa, requiring more seed to the acre, the young plants are much hardier. Alfalfa requires a good seed bed and freedom from weeds, grain or grass to get a start, while sweet clover cares little for the hardness of the soil provided it is covered to start with, nor does it mind very much weeds or grain. It will grow in almost any soil which contains a good supply of lime. In fact, it seems to require no other fertilizer.

I believe sweet clover is to play a very important part in subduing certain weeds of very bad character. In many parts of northern New England a weed has come of the most vexatious character. It is worse than useless. It spreads from the roots freely, and by a multitude of seeds that the wind carries everywhere without regard to the wish of the farmer. It is known as paintbrush or hawkweed. This weed has been spreading so rapidly in this



A. ELLIOTT'S APIARY IN LARIMER COUNTY, COLO.

American Bee Journal

section that I have felt anxious lest it ruin the beekeeping industry.

Imagine my pleasure on being informed recently that a farmer in a nearby town had discovered that sweet clover would run it out, or from its stronger growth smother this pernicious weed.

There is another weed that is doing great damage to the agricultural interests of the country. Almost all plants when out of place are weeds. I refer to witch grass, known also as barnyard grass, quack grass and devil grass. It comes into cultivated fields, making cultivation difficult, and choking grain crops. With modern methods of tillage it spreads rapidly by its strong creeping roots, any joint of which will grow into a new plant. Already I find it crowding out alsike clover, and if it continues to spread as it did of late, it may seriously injure our crops of honey.

There are two or three ways of subduing it. The roots may be dug out or the grass constantly cut off at the surface of the ground by intensive cultivation. I have tried both ways, but they are expensive. Another way is to smother it with shade. A crop of

buckwheat has often been advised for this purpose, and where the soil and weather are favorable, will do much to subdue it. Some years ago I subdued a half acre of this grass, by planting the ground to artichokes, and cultivating carefully the first of the season. Later the shade did the business. I doubt if the adaptability and value of sweet clover for this purpose has been appreciated. If a quack grass sod is plowed late in autumn and sweet clover seed sown at once, or sown in early spring with a light seeding of oats or barley, and the grain cut early for hay, there might be, if the soil and season were favorable, a crop cut later for hay of mixed clover and grass.

The next spring the sweet clover roots having stored up a supply of nutriment, will start into a vigorous growth almost as soon as the frost is out of the ground, and soon, if there is a good stand of clover, get such a start of the grass as to most thoroughly smother it before the close of the season.

The next spring, the ground filled with decaying grass roots and the dead nitrogen-bearing roots of the sweet clover will be in an admirable condi-

tion for a crop of corn or other grain.

But has sweet clover no faults? Some one may ask. We answer yes, and so have some of our best friends, but we do not propose to give them up for that reason.

For best results, it is well to remember that its seed does not germinate as readily as other clover seed, so heavy seeding is necessary. The second growth of sweet clover, the second year, does not start from the crown like alfalfa, but from the stalk, and the first crop should be cut high. Again, like red clover, the leaves are liable to rattle off when curing for hay, and it should, therefore, be cured in the cock. It should also be cut before it blooms or soon after, before the stems become woody, for hay. Not a very long or serious list of faults. "But why," some one will ask, "if sweet clover is so valuable has it not been utilized before?"

Let me answer by asking another question: If electric power and light are of so great value as we have come to think in these later years, why has the water been allowed to pour over our waterfalls ever since the white man first came to America without producing either? Simply because we did not know how to turn falling water into light or transmit its power. Sweet clover has not been appreciated because its value has not been known or the best methods of producing it.

I believe beekeepers should take the lead in introducing it and proving to farmers its value as a farm crop. Send to the United States Department of Agriculture for bulletins, study them until you thoroughly understand its culture, give them to your neighbors, and prove their statements true by your own success in cultivating it.

I believe that sweet clover is the most promising plant at present known to both beekeeper and farmer, to whom it will give good crops of hay, pasture and seed, and elements of fertility to the soil as well as honey.

I have overlooked an important fact as to the value of sweet clover. It is well known to experts that it is more and more difficult to grow clover on soils that have been long cultivated, owing largely to exhaustion of humus in the soil. Sweet clover will grow freely in soils almost entirely lacking in humus if there is only a good supply of lime. The necessity of growing legumes to keep up the fertility of soil need not be discussed here.

Middlebury, Vt.

[We cannot too strongly emphasize the remark made by our able contributor that "sweet clover is to play a very important part in subduing weeds of very bad character."

Paintbrush or orange hawkweed (*Hieracium aurantiacum*) was cultivated as an ornamental plant in Maine in 1875. It became frequent in New England in the early eighties, and is now distributed from eastern Quebec to the central States.—PAMMEL.

There is legislation against it in Canada.

Quack grass or quick grass (*Agropyron repens*), common in the central



M. R. COREY'S FEEDER PERMANENTLY ATTACHED TO BACK OF THE HIVE
Mr. Corey lives at Olathe, Colo., and has about 150 colonies

American Bee Journal

States, is ranked among noxious weeds with Canada thistle, cocklebur, etc. It is a creeper and hard to eradicate.

In our locality of central Illinois, sweet clover has been found to exterminate the ragweed (*Ambrosia artemisiifolia*), the plant which has been charged with causing hay-fever.

Although sweet clover will subdue these weeds by smothering them under its rank growth, it is not, itself, hard to eradicate, from fields or pastures where it grows.—EDITOR.]

Beekeeping in China

BY FRERE ROMAIN.

THE readers of the American Bee Journal will be pleased to know that this esteemed magazine is read as far as China; they will also perhaps appreciate the good will of that far subscriber who brings a note of variety in talking of the Chinese bees, which share in the oddity of their masters, the citizens of the newest republic. But there are so many reviews and bee papers in which a number of talented men are writing, that there seems to be very little chance to give anything worth reading. However, let me try it.

In China, we find the same bees as in Europe, the pure races excepted. They are nearly half yellow, but a little smaller than those of Europe, so much so that they rear "drones" in worker cells of European foundation. They are very slow to enter the sections; like their masters, they seem to distrust innovations.

In southeast China (Foo Kein) there exists another kind of bee, black, hairy, and much bigger than common bees. The workers are as big as black European drones. I nearly succeeded in getting a colony of those dragon bees. Unfortunately, the Chinaman killed them by smoking the box over the chimney of his hut. It was a great pity, for I believe those dragon bees are able to gather from the kidney beans (*Feves, Phaselus*), very abundant here in springtime. Common bees do not visit them, but the bumblebees and pseudo bees are foraging upon them the whole day long.

The Chinese bees are very mild and very easy to manipulate; a big hive may be visited, frame by frame, without smoke and without a sting. One of the most interesting qualities is that they completely ignore "propolis," not a bit is found in their hives (while I know Italians gather a big lot). This has perhaps the great inconvenience to attract the "moth," which is in fact a terrible enemy of bees, in China. But the manipulation of frames is thus very much simplified; our spacers being staple screws fixed in the top-bar, a single push or pull can move five or six frames at a time.

Naturally the Chinese peasants do not know the modern frame hive. They make hives of whatever vessels come to their hands, box, bamboo basket, old barrel, earthen pot, old petroleum box, bucket, pail, but their preferred system is "drawers," or stories without bottom, added underneath and gathered from the top. By this ingenious system they sometimes obtain a very strong population, but what amount of drones! Those boxes are usually placed in front of their houses,

high up under the projecting roof; often, also, they are placed inside the rooms, with a bamboo tunnel through the wall, or the entrance is made by simply removing a brick.

This last mode of location has the immense advantage of preserving bees of cold during winter, which is rather severe in the north of China, where a temperature of -25 degrees C. (-13 degrees F.) is often registered during the months of December, January and February. Another no less real advantage of this indoor location is to save the boxes from thieves. Hives in the open field, as in Europe, would have 9 chances out of 10 not to see the end of their first season; the Chinese being robbers or marauders by instinct or by necessity.

Bees are rather thinly scattered throughout China, a few here and there, except in certain districts in the West, where they are pretty numerous. In the wild state, bees are found in trees, old walls, in tombs, or rather in the space between the coffin and the masonry surrounding it. You must be informed that in China, the coffin made of thick planks (sometimes 5 inches), is simply laid on the ground and a rough brick wall constructed around it, leaving empty spaces, which those errant bees are glad to occupy. As far as I know, there are very few real "apiaries" in China. The best one certainly belongs to the Russian monastery, inside Pekin, N. E., which I visited in 1908. At that time it was composed of 85 large frame hives of different models, mostly resembling Layens (for cold climate), with Caucasian bees at the origin, imported by Russian monks, wintering perfectly well outside, protected by a thick cov-



THIMBLEBERRY BUSHES ARE A PRETTY SIGHT, AND THE BLOSSOMS FURNISH POLLEN AND NECTAR FOR THE BEES



WILD HAWTHORNE GROWS IN THE CANONS OF COLORADO, AND IS ATTRACTIVE TO THE BEES

American Bee Journal

ering of straw or hay. Another belongs to the Trappe of Yang Kia Pin, three days west of Pekin, numbering about 20 hives. Very good mountain honey is produced from a special peach tree and lime trees, introduced by the Rev. F. Trappists.

Many attempts have been made by Europeans and Japanese to introduce Italian bees in China, but up to the present with little success. A friend in beekeeping, Mr. B., has bought more than 20 queen bees from America or Australia, but all were dead on arrival except three which the bees quickly dispatched to their ancestors—"out with the foreigners." Lately the Chinese Government has manifested the intention of improving beekeeping, but.....years may pass before anything is done in practice. However, that industry could give very satisfactory results in many places.

In Shanghai, where, as a rule, winters are very mild, about -5 degrees C., (plus 23 degrees F.) strong colonies rear brood during the whole winter (a fact I have ascertained myself the last two seasons). Wax scales are very abundant on the bottom or floor. During the calm sunny days of November, December and January, the bees are gathering a good deal of pollen and honey from the loquat tree, just blossoming in winter; the consequence is that many colonies may swarm even in March. Middle China is in the same latitude as Texas.

Unfortunately our flora is very poor, China having no meadows and no woods. Here are our best honey plants: the colza or rape, the coronilla, some fruit trees, the wistaria, the virginia creeper, the cucurbitaceæ, the sunflower, the cotton, the loquat; of them the first only is abundant.

The honey, very inferior in flavor to European or American honey, is used only as a remedy, and the quantity obtained from a colony amounts to a few pounds only; 10 pounds would be a rich crop. Foreign honey is sold here at 85 cents to \$1.00 a pound. The British Bee Journal, the American Bee Journal, Gleanings in Bee Culture, and L'Apiculteur, of Paris, are read and circulated in Shanghai, where the beekeepers, a dozen already, seem to have a keen interest in beekeeping, and no doubt will improve that ever interesting branch of agriculture. Appliances are supplied by Messrs. Taylor, Gamage, Maigre, Root, etc.

Shanghai, China.

A Canadian Bee-Escape Board

BY W. I. HOLTERMANN.

I HAVE read an article written by J. L. Byer in your number for July, page 231, asking about a new bee-escape board put out three years ago by A. F. Hodgson.

I have seen this escape board working from the first, and there is no failure in it under proper condition. I have seen every bee out of the supers in three hours, when the escape had been put on early in the morning of a fine day, when the bees are working well.

This is merely an improvement on the old solid escape board. It consists of a Porter double-exit bee escape, in

a wire-screen board to allow heat to continue in the supers after the bees have left. The old escape board has always been more or less of a handicap to extracted honey producers, as cold honey is hard to uncap and extract.

I am sending you a diagram or sketch of the board. I trust it will make things intelligible. I refer to the double-exit escape, because it is much quicker than the single. Many escapes made do not work properly, as the least little jar seems to alter the springs so that they have to be spaced properly again, not a very convenient bit of work when the escape is fast in the center strip of the board. Mr. Hodgson always uses the Porter double-exit escapes, and they seem to stand hard usage.

A galvanized screen is used, the same as an ordinary window screen. Mr. Hodgson also uses these escape boards for moving bees from one apiary to another. He closes the entrance solid and places the escape board on top. That is the chief reason for the one inch space under it.

I have found trouble in store for me when a queen accidentally gets into the super and breeds there. Bees simply will not leave brood above; it is a case of brushing the combs off one by one, or taking the brood and queen and placing them down in the brood-chamber. Late in the fall or in cool weather with no honey flow bees are much slower in leaving the supers. In the latter part of July and the month of August is usually our extracting season. We run only for clover honey. When I start taking honey off, I make it a point to go a day beforehand and

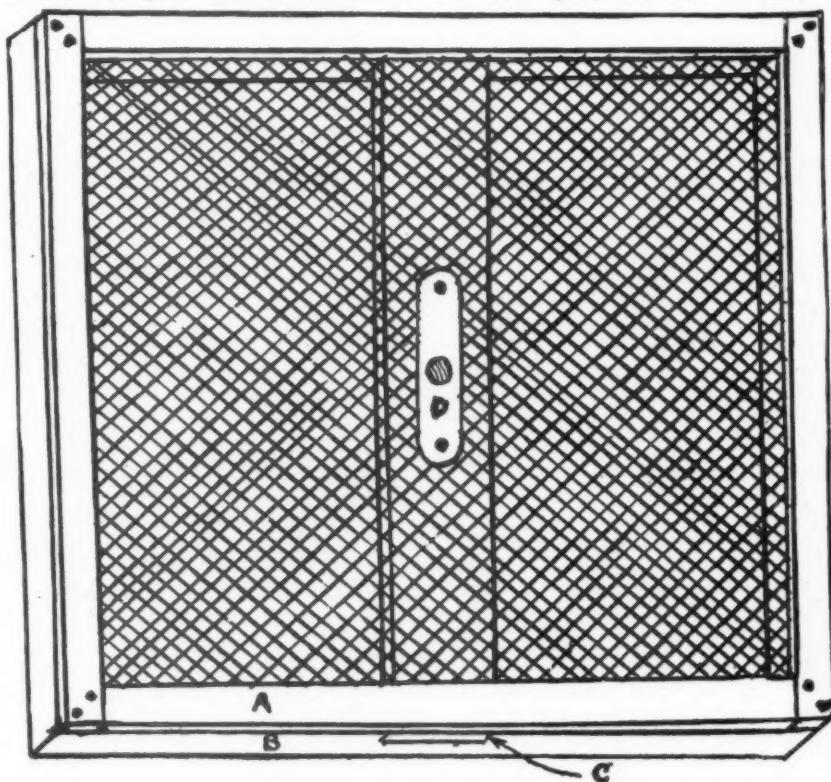
slip the escapes under the supers. I expect to be able to extract the next day. This is done usually in the morning, say 8 o'clock, then next morning I can go and take these supers off and put the escapes under another lot of supers. This is certainly a short cut for the beekeeper running for extracted honey. No man could clean the bees out of 40 12-frame supers and have them in the extracting room within an hour and a half, with the old method of brushing.

I believe this escape is protected by a patent, but further particulars may be obtained from A. F. Hodgson, Jarvis, Ontario, Canada.

Just a word of warning to those who have never used bee escapes in robbing time. Always put a burlap cloth directly under the cover, when putting the escape on the hive. This cloth should hang over and down the sides of super at least six inches. When all the bees are out of the super, it is an easy prey to robbers if an entrance can be gained even for a single bee at a time. The supers may have to be left for a longer time than expected; then the robbers would do your extracting for you if the supers are not protected.

Jarvis, Ont.

[The above article is very practical. Not only may the combs in the supers get cold if the weather is cool after the bees have left them, but they may also get too hot in very warm days, when ventilation cannot be forced up by the bees. If the escape board described by our correspondent is successful, it will remedy both faults.—EDITOR.]



HODGSON'S BEE-ESCAPE BOARD

A, strip $\frac{3}{4}$ x 1 inch; B, strip 1 x 1 inch; C, center strip containing bee-escape $\frac{7}{8}$ x 3 inch; D, bee-escape, $\frac{3}{8}$ -inch space above, 1-inch space below

Making Winter Cases from a Mechanical Standpoint

BY G. C. GREINER.

WHEN I exchanged my former home among the Naples hills, where I had the use of a serviceable beecellar, dug in the bank, for the level plains of my present habitation, the wintering problem became one of the most important features for my consideration. Digging a bee cellar on level ground does not offer the advantages of a rolling or hilly surface, and as wintering on the summer stand had become a favorite method of many older members of the beekeeping fraternity at that time, I decided to adopt outdoor wintering for my future beekeeping operations.

With the exception of a few experimental chaff hives (see Fig. 1), my entire outfit consisted of single-wall hives made of $\frac{3}{4}$ -inch lumber, and to make wintering in our zero latitude a reasonably safe undertaking, I decided to protect those thin hives by winter cases.

When ready to build them, the first point that demanded a decision was the lumber question. Repeatedly we find in our bee magazines the advice to use dry-goods boxes for winter cases, it being cheap material and plenty good enough for that purpose. This is not good advice in all cases. For the amateur who keeps a few colonies for pleasure or as a side-issue, these dry-goods-box winter cases answer all the purposes. But for the professional beekeeper who has to make his winter cases by the dozens or hundreds, this cheap dry-goods material is the most expensive he can use. Nothing but regular stock lumber, which may be of the cheaper grade, will fill the bill. If our hives are uniformly made, and no business beekeeper will have them otherwise, our winter cases must also be uniformly made, if we expect to do the work of making them and later of packing and unpacking systematically. To have our cases air and water tight, or at least practically so, they must be made in workmanlike manner, and this is next to impossible if our lumber is of all sizes, length, breadth and thickness.

Dissecting these boxes and saving the lumber, cleaning out the nails, etc., is a slow job, and careful as we may be, in spite of our scrutiny, we run our rip or cross-cut saw occasionally onto a nail, and then, of course, the workman has to take an hour or two off filing saws as a recreation.

A short time ago I undertook to make a few hive stands out of some dry-goods boxes I had set aside for this purpose. It is the only part of our outfit that can be made of haphazard lumber, provided we cannot use our time to better advantage. After the boxes had been taken to pieces, nails pulled, etc., I managed to fit the material for one-half dozen stands during the day. Every side piece had to be sawed at both ends and ripped on one edge at least, some on both. The lumber being of different thicknesses the end-pieces could not be cut after a pattern, but had to be fitted separately to each stand. The same with the



FIG. 1.—CHAFF HIVES MADE OF DRY-GOODS BOXES

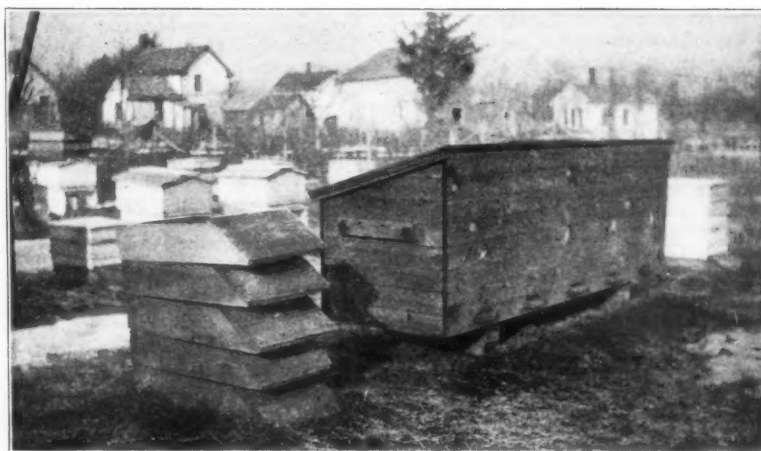


FIG. 2.—WINTER CASE OPENED TO RECEIVE BEES

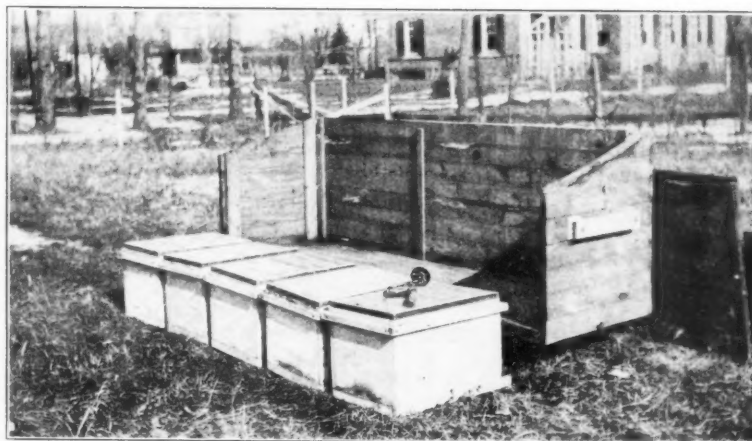


FIG. 3.—WINTER CASE COMPLETED

alighting-board. No regular breadth being available, they had to be spliced and fitted each one to its place. Now the question arises, which is the more economical, use these cheap cast-away boxes and waste your time trying to make something out of nothing, or use regular stock lumber and have something to show for your day's work. With lumber of the right

dimensions, several dozens would have been an easier and much pleasanter task than the half dozen mentioned.

In the construction of our winter cases the lumber plays a still more important part. After trying various kinds, rough, dressed, matched, soft and hard wood, etc., I have finally decided that second quality of white pine flooring gives the best satisfaction all

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around. Thin lumber $\frac{1}{2}$ or $\frac{3}{8}$ inch thick, as some beekeepers use for their cases, is not advisable for various reasons. Some years ago I followed a friend's advice and used yellow pine, sometimes called pitch pine, for my season's need. He claimed it was cheaper and longer lasting, not being liable to rot. Both qualifications are correct, but I would rather pay a little more and use the other kind. The objectionable features are too convincing to admit any argument, it is unnecessarily heavy and too liable to split when being nailed. I used it that one season, and have been sorry ever since I did it.

The size of the case is the next point to be considered. Allowing 3 inches of packing at the sides and ends and 6 on the top, decides width and height, and the number of colonies to be accommodated decides the length. When laying my plans for the first few I made as a trial experiment, I was misled by the mechanical rule of "the larger the case the more economical in regard to work and material." I planned them to hold nine colonies each. This was a great mistake, and like the pitch-pine lumber spoken of above, I used them only one season. Two features condemned them for all future use. First, they were too outrageously heavy to be handled by one person, and second, it required too much shifting to get nine colonies in proper winter position.

Although this first attempt could not be called a success, it was by no means a serious loss. By wasting a few inches of lumber and furnishing the necessary end sections, each one of these large cases could be cut in two, making one to hold five and the other three colonies. The experience of the next winter with these smaller winter cases gave such satisfactory results that I adopted the 5-colony cases for future use, and for a number of years all the added cases were of that type.

As time passed on, I also used still smaller cases holding three colonies, the remnants cut from those large cases the first year, and the longer I used them and compared them with the 5-colony cases the better I liked them. They offered advantages too apparent to remain unnoticed. While they were a little more expensive at the outset, requiring a little more labor and material, and later a little more work in packing for winter and unpacking in the spring, in proportion to the number of colonies accommodated, they eliminated practically all shifting of colonies for winter position, and the same re-shifting in the spring. Every third colony is in proper place for the winter packing, and each one of its neighbors needs only one shifting towards the center one to have the entire apiary in proper position for winter cases. Once going over the yard accomplishes this.

It is very different with the 5-colony cases. To arrange our bees in sets of five and avoid all confusion and possible loss of bees, the shifting has to be done with some caution, requiring perhaps three or four separate operations. Thus the question of size in regard to economy and practicability becomes one of deliberation. If we overreach in one direction, trying to save a comparatively small amount in the initial

cost, which occurs only once, we reduce the practicability of our outfit by increased work once or twice every year. From this it would seem that by taking the golden mean as our guide, where the expense in cash on one side and the outlay of time and labor on the other balance one another, we would obtain the most satisfactory results.

Taking all these points into consideration, I have come to the conclusion that a case holding three colonies is the most desirable for practical use, and consequently have decided to make all new work that I may need in that line of that size.

The shape and other individual features of our cases depend in a great measure on the summer arrangement of our bees. If they are placed in straight rows, facing one way, or in quadruplets facing in different directions, a favorite method of some beekeepers, which I consider a great hindrance when producing extracted honey, our cases must be planned to meet these conditions.

The accompanying photographs are taken from cases as I use them today. Figure 3 is the one case ready for the bees. The roof and back section are removed and set against the front of the case. The bees are taken from the stands and set on the ground, the stands removed and the case has taken their places. Figure 2 is the case as it appears from the front when completed with stands and outside covers stacked at each end.

Sheltering bees, as here shown and described, is not as lengthy a job as it may seem to the uninitiated, if we are prepared for this part of our business. For my own gratification I timed myself last fall when preparing my bees for winter. One forenoon, when the weather was ideal for this work, I completed nine cases in $3\frac{1}{2}$ hours. This included every stroke of work from setting the bees on the ground back of their stands, to the finished case as shown at Fig. 2. The tool that operates the square-headed screws at the corners, when opening and closing the back of the case, is seen on the first hive. It is of my own invention and construction; a wrench that fits into the common brace and does its work at lightning speed.

La Salle, N. Y.

Report from Wisconsin

BY N. E. FRANCE.

OUR honey season is over. We had cold and almost daily rains during the blooming season. Clover bloom was plenty, and some days the bees worked all the afternoon. Basswood bloom was plenty but short, and every day a rain. I had extra strong colonies, plenty of storage combs tiered up three to five high, left combs filled and sealed some time before extracting. The honey was too thick to strain through a cloth or gravity strain perfectly, and we had to warm up the honey in warm water so we could strain it. Now it is all in 5-gallon cans boxed for market. I am selling my honey at 10 cents for small lots or 9 cents by the 5-gallon can. My old customers will take the crop and more.

We have found another trouble with bees in many apiaries including my own. The brood seems healthy, but at the opening of the honey season both old and young hatched bees by the hundreds were running in the grass never to return to the hive. Upon examination my son found the lower part of the digestive organs swollen and full of brown-colored matter, quite offensive, often causing decay before the bee dies. Colonies thus affected were depleted from 10 to 50 percent of their hatched bees. The disease was worse on cold and wet days of which Wisconsin has had an abundance lately, but little of it showing on bright warm days. We think the condition of the weather causes it, as we had an abundance of it 17 years ago all over Wisconsin for two weeks in June.

I am looking for a great meeting Sept. 7 and 8.

Platteville, Wis.

[The disease described by Mr. France seems similar to the Isle-of-Wight disease and the May disease or paralysis. The exact cause has not yet been pointed out, although the *Nosema apis* is generally found in diseased bees. Damp, cool, cloudy weather helps to bring it on. It is not usually of any importance as it lasts but a few days. But in moist countries like England the trouble gives serious concern.]

Mr. Frank F. France, son of N. E. France, announced to us the birth of a son, Dean Floyd France, June 6. This is the 4th generation of beekeepers in a family known the world over as great honey producers. Edwin France, the great grandfather, was a contributor of the American Bee Journal 38 years ago. N. E. France was for years General Manager of the National Association. Many beekeepers will be glad to meet him at Hamilton Sept. 7.—EDITOR.]

Uniformity of Sections—Sanitary Section Made of Tin

BY F. GREINER.

IT is puzzling to the novice in bee-culture, and to the professional as well, when we see the many different styles of hives, supers, sections, etc., listed in the catalogs sent out by the bee-supply houses, and can scarcely help asking the question: Why all this confusion? When we investigate we discover that it is more notion than anything else. Principle is rarely involved. From the standpoint of the beekeeper or honey producer, and the purchaser or consumer of honey, but particularly from the standpoint of the dealer in hives and honey, uniformity in hives and sections is very desirable. There was a time when the $4\frac{1}{2} \times 4\frac{1}{2}$ section was the standard. Would that no other size had been added. The introduction of the 4×5 and other tall sections was a great mistake. I am sure it would be a benefit to all if we were using uniform sized sections all over the United States.

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This ideal condition will probably not be brought about, but we should work toward that end. The beekeepers are waking up to the fact that something ought to be done along this line as is shown by the subjects discussed at the conventions held in New York State the past winter. It would seem that the $4\frac{1}{4} \times 4\frac{1}{4}$ section is now most extensively used by the beekeepers; this, then, would be the size upon which we ought to settle, discarding all the others. But does the $4\frac{1}{4}$ section of the past meet the requirements? If the $4\frac{1}{4}$ wood section does not fill the bill, and if in addition the supers now in use are not suitable for a section that will satisfy the demand, then it does not matter whether or not the improved new section is of the exact size of the one now most commonly used, and it might then be an advantage to adopt another size altogether.

Consumers of comb honey are often obliged to pay 25 cents per 13-ounce section of clover honey in the city. The 4×4 sanitary tin section, hermetically sealed when finished up, is a most desirable package for the retail trade, as may be found when visiting retail stores in cities. It is preferred every time by the purchasers.

The question is, can the beekeepers afford to use so expensive a package? In other words, will purchasers pay for it? Let us suppose that we are willing to furnish 13 ounces of honey for 15 cents; this is by all considered a good price; adding the present price of the package, about 4 cents, and the shipping case, about $\frac{1}{2}$ cent for every section, would make a total of nearly 20 cents, which such honey should bring to the producer. This is indeed what the retailers do pay for such honey, but to obtain it at that price, the producer would have to deal direct with the retailer, a thing which but few of us could possibly do. From this standpoint we, the producers, would gain but little if any by using the new sanitary package of tin. But when we consider that it sells at the rate of 10 to one of the regular wooden package, that the latter, even in paper carton, was left in the retailer's hand unsold, it would seem the sanitary would pay.

The beekeepers in New York go still further. They are not satisfied with the above; they want a package, glass or tin, for extracted honey interchangeable in the shipping crate with the comb honey section, so that a case of honey may contain both comb honey and extracted honey. Such a feature would be of especial value when producer is dealing with consumer direct. The latter may want, for instance, $1\frac{1}{2}$ dozen sections of comb and $\frac{1}{2}$ dozen packages of extracted honey; the producer can adapt himself to the demand, as purchaser may desire.

It seems to me that such uniformity of the section would be the desideratum. The New York beekeepers are testing this matter this season. It may be that we have arrived at a turning point in section making. This would be gratifying to those who have held that the use of basswood for sections is a criminal offense.

Whether it is possible to use the tin sections with our regular style wide frames or section holders is a question we will have to find out. The origina-

tor of the tin section, Paul Hunten, constructed a frame particularly fitted for such a section, but this is rather awkward, and we should have something better.

Naples, N. Y.

No. 9.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

WE come now to some of the trees and shrubs which are generally recognized as important sources of nectar. Aside from the clover family some of the largest yields are secured from trees. There are a number of trees that secrete nectar in sufficient abundance to justify the beekeeper in seeking a location near such forests.

BASSWOOD OR LINDEN.

The basswood, *Tilia americana*, also known as linden, whitewood, and sometimes as limetree, is one of the best known sources of honey in the eastern States. There are other species closely related which also produce nectar, and which, perhaps, would not be distinguished by the casual observer. The natural range of the basswood is from Canada to Florida and west to Nebraska and Texas. It is also grown as a shade tree in other western States and is mentioned by Richter in the bulletin on honey plants of California, as an introduced species of value. Fig-

ure 41 shows the tree in bloom and Fig. 42 a close view of the blossom and leaf.

The tree thrives on rich lands and in the cooler regions of the country reaches a large size. The wood is soft and white and much in demand for making sections, separators and other bee supplies requiring a soft wood cut in thin sheets. For such purposes basswood has no superior. The wood is also sought for use in the manufacture of furniture, packing boxes, etc., as well as for paper making.

The blooming period is short, seldom yielding to exceed ten days or two weeks, and often for a much shorter period. The honey flows from basswood are irregular and only to be depended upon about two or three years out of every five. A heavy flow from this source occurs only occasionally, but when it does come it is worth waiting for, for enormous yields are sometimes secured. The honey is white in color with rather a strong flavor, but is usually regarded as high quality. Good basswood locations are no longer plentiful, as the cutting of the forests over the entire country has resulted in a large reduction of this along with other trees.

LOCUST.

The black locust or false acacia, *Robinia pseudo-acacia*, is a native tree from Pennsylvania to Iowa and southward. However, it has been widely introduced into other States, thus greatly extending its range. It is now

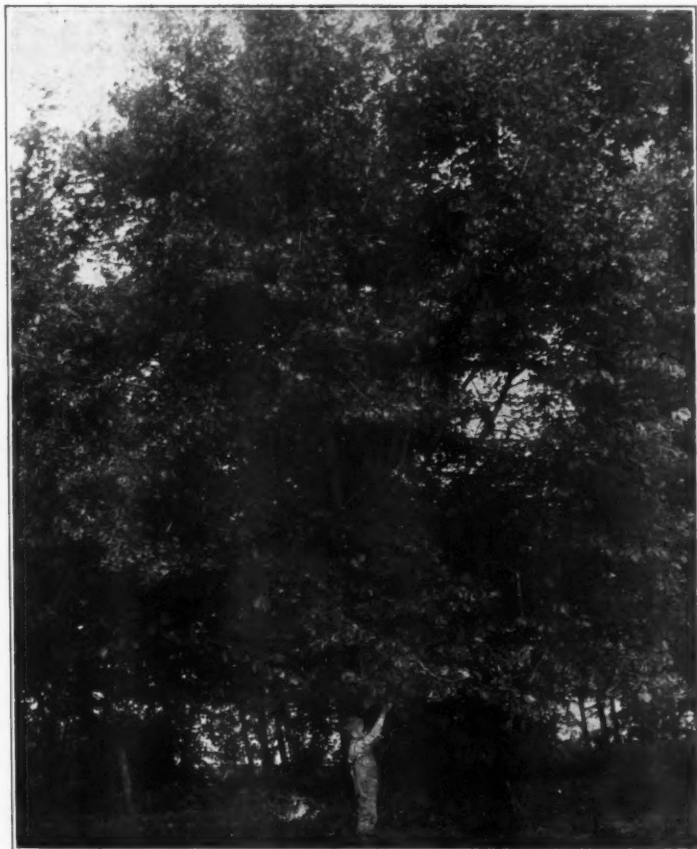


FIG. 41.—BASSWOOD TREE IN BLOOM



FIG. 42.—BLOSSOM AND LEAF OF BASSWOOD



FIG. 43.—BLOSSOMS AND LEAVES OF BLACK LOCUST

to be found in many places from New England and Canada southward, and is reported as producing a surplus of honey in parts of California, and is listed among the honey plants of Texas.

The wood is desirable for posts, railroad ties and other purposes requiring durability. Large plantations are often set for utility purposes, so that in some localities the beekeeper may readily expect a surplus from this source. Borers are a serious menace to the life of this tree, and whole plantations of locust are sometimes injured by the insects, which kill the branches and sometimes the bodies of the trees,

causing them to sprout again from the root.

According to Lovell, the honey is water white, of heavy body and mild flavor. Figure 43 shows the blossoms and leaves. The flowers, it will be noted, much resemble those of the garden pea.

In some localities the tree is known as white or yellow locust.

SUMAC.

The sumac family is represented by some species in nearly all parts of the country. The smooth sumac, *Rhus glabra*, is found from New England to

Saskatchewan, Colorado and Arizona, south to Florida and Louisiana. I find no mention of it in Texas or California, although related species are found there. Figure 44 shows the blossom and leaf of this species. The fruit is very conspicuous in autumn and winter, the crimson berries serving the



FIG. 44.—SUMAC.

birds as food. Honey from sumac is of good quality and flavor and light in color. In some localities the quantities secured are sufficient to insure a good surplus in favorable seasons.

The well known poison ivy or poison oak belongs to this family and is a good honey plant. Probably nearly all the sumacs produce some honey, and the family may be regarded as important additions to the honey-producing flora.

VIRGINIA CREEPER.

The Virginia creeper, also known as American ivy or woodbine, *Parthenocissus quinquefolia*, is a common climbing vine in thickets and woods from New England to Quebec and Manitoba, Dakota and Colorado and south to the Gulf from Florida to western Texas.

While the bees seek it eagerly at times and the vines fairly hum with them, it can hardly be regarded as of great importance to the beekeeper.

This plant is often confused with poison ivy, but the two plants can easily be distinguished by the difference in habit of growth, and by the five leaflets in the creeper, as shown in Fig. 45, while the poison ivy has only three leaflets to each leaf.

GRAPE.

The grape family, *Vitis*, is represented by wild species in all parts of the temperate regions of both hemispheres, and by cultivated species in nearly all parts of the world. There are about 30 species of wild grapes,

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and where sufficiently abundant they are very attractive to the bees. In many localities cultivated grapes are grown in large acreage. The nectar yield is not as abundant as with many plants, but is of some value where the vines are grown in abundance. Quantities of pollen are gathered from this source. At times honeydew is gathered from the leaves.

Atlantic, Iowa.

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European Foulbrood in Austria

BY M. G. DADANT.

I HAVE before me a 20-page pamphlet by Oswald Muck, and published recently in Vienna, entitled, "Seuchen der Bienenbrut" (Diseases of the Brood of Bees). The pamphlet is accompanied by two tables and several colored plates.

The author devotes the first few pages to a description of healthy brood and to a general survey of the foulbrood situation. He differentiates between six different diseases of brood in central Europe, named as follows:

1. "Boesartige," foulbrood (American).
2. "Stinkende," foulbrood (European).
3. "Sauerbrut."
4. "Sackbrut."
5. "Steinbrut."
6. "Kalkbrut."

The first and fourth of these diseases agree very well with the same diseases encountered in this country. The last two may be omitted as being more or less local.

It is to the second and third diseases that I wish to call particular attention; Stinkende or European foulbrood and Sauerbrut. These two diseases are not differentiated here in America. Witness the following extract from the pamphlet: "The 'Stinkende' or European foulbrood and Sauerbrut are in etiological respect and in the manner of development very closely related. Dr. White, of America, does not seem to recognize 'Sauerbrut' in definite form as we do in Europe. He seems to have come upon the former and diagnosed it as a virus including the two, speaking of the two diseases in general as European foulbrood."

I think that those who have come in contact with this disease in this country will be interested in the following description of the symptoms of the two diseases as differentiated by the German pamphlet.

"With 'Stinkende' (European) foulbrood one can observe the following characteristics:

- "1. The sick larvæ are flabby.
- "2. They lose their luster and become from brown to coffee colored.
- "3. The dead larva is transformed into a brown, dauby, weakly, stringy, (slightly ropy) mass.
- "4. The larvæ give out a strong disagreeable odor like glue, foot sweat or foul paste. In bad cases one can recognize the smell by merely opening the top of the hive.

"5. This foulbrood mass dries at the bottom of the cell or on the lower wall and looks like a dark brown polished

scale that consists entirely of spores and contains no bacilli.

"6. Here and there larvæ die in the sealed cells; the brood is irregular. In the same comb with the diseased larvæ, and at the same time, healthy brood appears."

But in "Sauerbrut" other symptoms are noticeable.

- "1. The sick larvæ are flabby and

"2. lusterless, and from light to dark yellow in color.

"3. The foulbrood mass is pulpy and not stringy, and can be taken out of the cell without pincers without breaking the skin of the larva.

"4. The odor is sharply sour, like concentrated vinegar.

"5. The dry scale is almost golden brown, and may be easily loosened



FIG. 45—VIRGINIA CREEPER OR AMERICAN IVY



FIG. 46.—WILD GRAPE BLOSSOMS

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from the cell wall.

"6. The brood is irregular.

"Both diseases are a light form of foulbrood and often disappear of themselves under favorable circumstances. The lighter form is 'Sauerbrut,' which can readily turn into 'Stinkende' (European) foulbrood, and finally into American foulbrood, since bacillus larvæ, which comes forth more abundantly than one thinks, crowds out the other bacteria."

When we first came into contact with European foulbrood, we were at a loss to understand how some beekeepers could maintain that it was a "stinking" disease, nor could we ever find any traces of slight ropiness such as we were led to believe existed by prominent writers. Later experiences have shown us, however, that under some circumstances the ropiness exists, although in the light cases we have had, no smell was noticeable. In one or two instances the color and ropiness were so pronounced as to lead us into believing that the colony was affected with American foulbrood.

This, I believe, will explain why authorities disagree so thoroughly as to the smell of European foulbrood. Some have had one stage of the disease described in the pamphlet as "Sauerbrut" while the others have had the worse form described as "stinkende."

Our experience has been almost wholly with the mild form of European foulbrood (Sauerbrut), while we have had only a few cases of the more virile form (Stinkende), and have seen both forms in the same colony.

The New York authorities, as I remember, state that European foulbrood exists in the State, in some cases being much more virulent than in others. Sometimes it gets so bad that it is deemed advisable to shake the colony, as in American foulbrood, so as to weaken the strength of the disease.

Hamilton, Ill.

A Remarkable Tree for Avenue Planting

BY TARTLTON RAYMENT.

CALIFORNIA has taken the eucalypts to its bosom, so to speak, especially the blue gum (*E. globulus*). (When the Australian advocates of forest preservation desire to stir up a neglectful public to the urgency of conserving the indigenous timber, they always cite the possibility of our receiving blue gum sleepers from California.) However, there are many other wonderful trees in this commonwealth eminently suited for cultivation in America.

While many species of the eucalypts are extensively grown in the United States, and are highly prized, the timber from these trees is entirely destitute of "figured" grain characteristic of some other Australian botanical orders. The tree—details of which are shown in the illustrations—known to Queenslanders as "silky oak" (*Grevillea robusta*), is indeed a remarkable one. In its northeastern habitat, the glorious feathery blossom provides an unforgettable floral harmony during

November and December—hot weather in Australia.

During this period of florescence, the unique cadmium-orange colored flowers completely eclipse the soft, silvery green foliage. (Where a dark background, such as pines, is provided, the flaming bloom makes a lovely artistic contrast.) Everything is so "feathery," floral gossamer, in composition. The clusters of florets; the urgent sheen of the leaves; the large sparkling drops of nectar so abundantly secreted—when a spray is plucked the hand is drenched with the limpid fluid—the droning of contentious bees busily salvaging the sweetness from the depredations of the honey-eaters, all go to make the "silky oaks" beloved by all nature students who come in contact with them. The species grows rather quickly, and with artistic

symmetry, making it an ideal every-green for avenue planting.

Inset in the picture, is a detached floret displaying the large globule of nectar which forms at the base of the aborted petals. Close to the nectary are two crimson splashes. The amount of sweet liquid offering in each tiny floret is beyond the capacity of a honey bee, and when it is remembered that many dozen florets are in a single spray, the nectariferous production excites our wonder. The pistils assume a curvilinear sweep, and this gives the sprays an uncommon "looped" appearance. The foliage is suggestive of the classical acanthus, and is delicately pale on the underside. (I have endeavored to portray this feature in the smaller drawing, where the curious arrangement of the seed pods is also shown.) As the capsules dry, they



A SPINEBILL HONEY EATER RIFLING THE RICH NECTAR OF THE SILKY OAK BLOSSOMS

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burst open, like a bivalve, and liberate a small, flat, heart-shaped seed. The bunch of seed vessels repeat the disposition of the florets, and this is apparent in the illustration.

The honey-eaters mentioned above, are like the "silky oak," peculiar to Australia. These handsome birds belong to the order Meliphagidae, a very appropriate name. They are provided with a brush-like tongue, beautifully adapted for sweeping the nectar from the flowers of the indigenous flora; for example, eucalyptus (gum trees), Banksias (native honeysuckle), Epacris (native heath), etc.

The long, slender, curved bill permits a thorough exploration of the nectaries, while the strongly developed feet allow the birds to hang in amusing acrobatic positions to reach the honey and pollen that forms the chief items in the birds' dietary. In summery weather, the loud musical note, "tink chink," of the honey-eaters is nearly always associated with the advent of "silky oak" blossom. However, in forests of this valuable tree there is rich, golden nectar for all; none need go short. (The writer has closely observed bees on "silky oak" bloom, but has never succeeded in securing any pollen.)

The bird in the picture is the spinebill honey-eater, though sometimes called "the cobblers' awl" in allusion to the long, curved beak. The timber of the British oak is historical, but its beauty is surpassed by the "satiny" figuring of the Australian "silky oak." Californians "get busy" and add a new beauty to the landscape of the Pacific Slope.

Gippsland, Victoria, Australia.

Honey Vinegar

BY THE EDITOR.

SOME years ago there was an extensive article on the making of honey vinegar in the American Bee Journal. I have lost all those copies and cannot refer to them. I would like to know how to make it. It seems to me that in the quick process the vinegar had to drip through beech shavings. We have no beech now, but we have post-oak and hickory. I believe, as I remember the process, it is like this:

"Put honey in good barrels until a fresh egg will float, then put in some mother of vinegar and let it work; skim it as often as necessary and keep in a warm place. Then if this process is right, after the vinegar is made, I would like to know how to keep it indefinitely so it will remain clear and not become cloudy and form new mother? Can it be put in bottles and brought to a boil and sealed so it will keep?—E. B. N."

The articles to which our correspondent refers were published in March and April, 1910. Those who retain the Bee Journal files may readily refer to them. But as the majority of readers fail to keep the back numbers of the American Bee Journal in a shape that will allow them to find promptly the matters desired, and as we have had several enquiries similar to the above, we will give the principal

requirements for the making of good vinegar from honey.

When honey sells readily and apples are plentiful, it is a mistake to make good honey into vinegar, for apple cider is exceedingly cheap and makes good vinegar. However, we often find ourselves with a supply of water which has been sweetened with honey, in washing cappings preparatory to melting them into wax or in cleansing large vessels which have contained honey. Throwing away this sweetened water is a waste, for it may readily be used to make excellent vinegar.

If we make our vinegar by diluting a known quantity of honey, we should use about 1½ pounds of honey for each gallon of vinegar. We may use as much as 2 pounds or as little as one pound and the result will be stronger or weaker vinegar, the strongest vinegar requiring the longest time to make.

If we use sweetened water of which the strength in water is unknown, we must test it by allowing a fresh egg to float in it. The egg must come to the surface, showing a spot out of the water about the size of a dime. If the egg does not show, add more honey, if it rises too much, add water until the proportion is right.

Honey which has fermented slightly because unripe or because it has been exposed too long to the air is unfit for use except in vinegar.

But there are other germs of fermentation than alcoholic and acetic fermentation germs, in honey. The flowers from which the honey was taken may have contained many different germs. It is advisable to kill all of them by heating our honey water to say 180 degrees. After that we will supply the proper germs. Our method is to use a little fruit juice put into the sweetened water after it has cooled down to 70 or 80 degrees. If the air is allowed to reach the preparation and the temperature is sufficiently warm, the alcoholic fermentation will begin at once and will be very active for a week or so.

We are then ready for the acetic

or vinegar fermentation. If plenty of air is supplied and the insects are kept away it may begin before we are aware of it, for those who are in the habit of making wine know how readily an alcoholic fermentation will turn to acetic when plenty of air is supplied. But if the acid fermentation does not take place it is easy to supply it by adding to the liquid a small quantity of good vinegar or a little lump of vinegar mother. We understand, however, that the so-called vinegar mother is only a deterioration of vinegar, which will not be found in quickly made vinegar. This is the place where the beech shavings have come into play, with manufacturers of vinegar on a large scale. Acting on the principle that plenty of air is needed, they allow their vinegar to drip through a barrel which is open at both top and bottom and is filled loosely with beech shavings. The vinegar dripping through is so easily oxidized that it becomes strong in a very short time. A very important requirement is to keep insects away from it. The vinegar-fly (*Drosophila*) would soon reproduce in it. I believe that other hard-wood shavings, such as oak or hickory would be as good as beech shavings to allow the dripping of the vinegar.

When the vinegar is in the process of making you will notice a small white substance floating upon it. This is the fermenting bacterium (*Mycoderma aceti*), which is always present in good vinegar in the process of making. If you have managed to supply it, or if it has been supplied from the air, where it is usually found, your vinegar will make readily.

When good vinegar is made it often contains a small eel-like worm, *Anguilula aceti*, which may be seen with the naked eye if a little of the vinegar, in a thin vial, is placed between your eye and the light. This is never found in artificial vinegars made of injurious acids, and is perfectly harmless. It may be readily killed and drained out by heating the vinegar to 180 degrees and allowing it to settle. Both this



NEATLY KEPT APIARY OF WM. WESTON, AT ESSINGTON, PA.

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and the vinegar-mother are stopped in their development by the application of heat. So heat should be used before bottling the vinegar.

As a matter of course there are some requirements to follow if we want good vinegar. It must be made in clean, fresh barrels, entirely free from mold or bad taste. It must not be kept in tin or in vessels containing iron, as it has powerful rusting influence. It must be sealed as soon as its fermentation is over. Its influence over other articles of consumption is very great, and it is a mistake to keep open jars or vessels of preserves, marmalades, cider, claret, etc., in the same cellar.

For making pickle preserves, a very excellent method consists in flavoring the vinegar with leaves and stems of tarragon (*Artemisia dracunculus*), an aromatic perennial plant easily grown in our gardens and deserving of more credit than it gets. Tarragon vinegar has a high reputation where it is known.

The vinegar made from honey is as

good as the best, if properly managed. But like all other culinary preparations it requires care in the making and proper preservation.

If your vinegar is sweet, it is because its alcoholic fermentation has not been permitted to terminate before the acetic fermentation took its place. Both may go together, but the work is more thorough when they follow each other. Sometimes the sweetened water is so strong in honey that there is always a surplus of sugar. In that case add more water and put your vinegar in a warm place. It may continue to strengthen during the winter if you keep it near your cellar furnace or close to the kitchen stove. If it is too weak, add a little honey.

The adding of honey vinegar to cider vinegar often improves both, the former supplying additional strength, the latter aiding the acetic fermentation by the numerous germs it contains.

Hamilton, Ill.

frame Langstroth, as we have a 3 months' honey flow here.

10. I have never seen the necessity for a queen excluder with the beeway sections, but the plain is considerably more open, and I wonder if it is necessary to use queen excluders? If so, that would be a big point against the plain section. CALIFORNIA.

ANSWERS.—1. After trying more or less the different kinds of sections, I settled down some time ago upon the 2-beeway sections, $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$. I think this is the preference of the great majority of comb-honey producers.

2. Beeway.

3. I don't think there is so much objection on that score as there is because the plain require so much more care in handling lest the fingers be thrust into the comb when they are handled. More care must also be taken in setting down a plain section lest it topple over. During cleaning, the plain section is more likely to be injured. In general it may be said that the projection of the wood in a beeway section is a protection, although it has more of a clean look than the plain.

4. Of late years I have no trouble in that line, probably because of Italian blood in the bees. Years ago, with black blood, I had a good deal of trouble, and fumigated with sulphur. Carbon disulfide may be better.

5. Yes, I think there is advantage enough or else I wouldn't use them, both on account of the expense and because I am averse to have anything out of the usual fashion. I don't know what percent difference in swarming is made by the deep bottom-board; I know that it gives better ventilation, and that good ventilation is a factor in the prevention of swarming.

6. I take off a super as soon as it is all sealed except the corner sections, although often these will be finished, too.

7. The second super is put under the first, and at the same time another empty is put on top. This last serves as a safety valve in case the bees should need more room. There is another important advantage. With the best care it will sometimes happen that the upper starter will not be fastened securely its entire length, although this would not be noticed in ordinary handling. If such a section be put next the hive under another super, the bees will cluster upon it and drag it down. If it be put on top the bees will very gradually occupy that super, and will fasten the starter securely before any special weight is put upon it. In most cases the top super will not have much, if any, work done upon it at the next visit, but it will be ready to be put down as the lowest one, and a fresh empty super will be put on top. When the flow is on the wane some care must be taken not to have too many unfinished sections, and then the empty super is not put below, but if the bees need more room they can work up into the super on top.

8. To tell all about what I have done to prevent swarming would be too long a story to tell here, but if you care to know about it you will find it in "Fifty Years Among the Bees." After all, I count the prevention of swarming an unsolved problem. At a rough guess I should say that there may be from 5 to 10 percent of the colonies actually swarm. But if they do swarm, no swarm is ever hived as a separate affair, but obliged to remain in its old colony, for one of the important points in securing good yields is to keep from dividing the forces.

9. I use the 8-frame Langstroth, or dove-tailed, not because I think it better than the

DR. MILLER'S



ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Unfertile Queen—What to Do for Laying Workers

I am the owner of an apiary of about 70 colonies, in a little town of 2000, situated on the east coast of southern Florida, 50 miles north of Miami. Ever since a boy I have liked bees, and have always kept from 8 to 10 colonies. A year ago I bought about 40 colonies, and have now a little apiary of which I am rather proud. I am 21 years of age.

Having acquired so many bees all of a sudden, I am meeting with quite a few difficulties which I sometimes overcome, but often not. My main trouble is to dispose of my honey crop, for which I have not found a regular market. I have now on hand over 80 gallons for which I cannot get more than 45 and 50 cents per gallon. It is a very good grade of honey, a mixture of orange and palm blossoms.

1. I have a colony of bees which I caught as a spring swarm. They started to build very nicely, but after about a month I noticed they had stopped working almost entirely, and upon looking I found them to be queenless. They had the hive about half filled with capped honey, so I gave them a frame with young bees and larvæ. After about a week they had from five to six nice queen cells built, two of which were sealed. Being very busy after that I did not get to examine them for quite awhile, probably another month. But noticing them still weak I looked them over again, and to my surprise I found the comb filled with drone brood. Thinking that they had failed to rear a queen, and had laying workers, I examined them closely, and again to my surprise I found the queen; though it was but very little longer than the workers, it was a perfect queen. It seemed to be dragging its left hind leg, as if it were hurt. What do you think, has she not mated?

2. What do you do with a colony that is affected with laying workers and still is fairly strong? FLORIDA.

ANSWERS.—1. I don't see any other answer to the puzzle than the one you have given, namely, that the queen was not fecundated.

2. In nearly all cases the best thing to do with a colony having laying workers is to break it up. If for any reason it be desired to keep it intact, then it will not do to introduce a laying queen, as it will most

surely be killed. It may or it may not respect a sealed cell, but it will receive kindly, without any caging, a virgin less than 24 hours old. It will help in more ways than one to give the colony one or more frames of brood from a normal colony. Indeed, it may answer to do nothing more than to give brood, some of it eggs or young unsealed, and allow the colony to rear a queen therefrom. Brood given more than once would keep up the strength of the colony until time for the queen to lay.

Style of Sections to Use—Bottom Boards—Prevention of Swarming, Etc.

1. What style of section would you advise? I had thought of the ideal, $3\frac{1}{2} \times 5 \times 1\frac{1}{2}$ plain.

2. Do you prefer the plain or beeway section?

3. Are not many of the best plain sections ruined for shipping by the bees drawing them a little beyond the wood?

4. Do the moths bother the honey after it is removed from the hive? If so, do you fumigate, and how?

5. I believe you use a 2-inch space under your frames with a rack made of lath, or something similar on edge to keep the bees from building comb in this space. Is there enough advantage in this 2-inch space over the $\frac{7}{8}$ -inch space of the regular bottom-board to warrant one in putting in something not a standard? Further, would the bees build to any extent in the $\frac{7}{8}$ -inch space of the regular bottom-board when running for comb honey? What percent of swarming would you have when using this deep bottom-board if you did not look over your brood-nest regularly and remove queen-cells?

6. Do you leave your comb honey all on the hive until the honey season is over or do you take it off as fast as finished?

7. In the early part of the honey flow, in putting on extra supers, do you put them underneath those already on top?

8. What do you do to prevent swarming, and what percent of swarming do you have in spite of all your preventatives?

9. Do you use the 8 or 10 frame hive, and is it a Langstroth? If not, give the dimensions of the hive. I propose using the 10-

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10 frame, but because I changed to 8-frame when that became the fashion, and as a matter of convenience still continue using the smaller hive.

10. I don't know, but I doubt if there would be any more need of excluders with the plain sections.

Placing Bee-Escapes—Bees Casting Swarms—Age of Brood—Where are Queen-Cells in the Hive?

1. When you have on more than one super how would you put a bee-escape under; would you lift the supers one at a time and put them on a bench, and then after the escape is on put them back?

2. If you wash yourself with salt and water before handling bees, will it help to keep them from stinging?

3. One of my colonies put off a swarm about 10:30 a.m. and went back. The next day it swarmed again about 7 a.m. What was the matter? It was the second swarm.

4. Can I put a swarm back? Does it make any difference what hive you return them to? What is the best way to return a swarm?

5. Can you tell how old brood is if you do not look at it very often?

6. When is the best time to blow smoke in at the entrance when opening a hive, on a cloudy or sunshiny day, or both?

7. How long can you keep the hive open when handling bees without smoke? When they come to the top of the frames do you smoke them back?

8. Are queen-cells in the middle of the hive or on the sides, or both?

MICHIGAN.

ANSWERS.—1. If there are two or more supers on the hive you are not likely to want to take all off at a time unless at the close of the season. So lift off supers until

is sealed you can tell nothing about its age by looking at the sealing.

6. The time to blow smoke into the entrance is just before you take off the cover, no matter what kind of a day.

7. Maybe one smoking will do for all day; maybe two minutes. So long as the bees remain peaceable they need no more smoke. No matter if they do come to the top of the frames so long as they remain good natured, but when they begin to fly at you give them enough smoke to make them behave.

8. A queen-cell may be anywhere in the hive where the bees have any other brood, as on a bottom-bar.

Swarming—Uniting

1. I had two swarms come out of one hive at the same time and go away together. Why was this? I put them in a hive and in two days one swarm came out.

2. These two hives seem to be about one-third drones; would it be right to use a drone trap?

3. I would like to have your best plan for putting colonies in with each other.

MICHIGAN.

ANSWERS.—1. You say you had "two swarms come out of one hive at the same time." That would really be only one swarm, the swarm dividing into two parts, as sometimes happens. Like enough they came out after two days because the hive was too close and warm, but I don't know why only part of them should do so.

2. It would be a good plan to trap the drones, and it would also be well to get rid

comes, and the hive is boiling over with bees, provided the combs have been built on foundation so that the septum is in the center of the frame, it matters little about the order of the frames. Indeed some think that putting the outside combs in the center has a tendency to prevent swarming.

2. Your question is not as definite as it might be. If you are talking about killing cells to hinder or retard swarming, then by all means destroy *all* cells. To leave one would be about as bad as to leave all. If you mean destroying cells about a week after a prime swarm has issued, so as to prevent an afterswarm, then leave one cell, and only one. If you leave two, you are just as likely to have an afterswarm as if you left all. Yes, there is a little risk in leaving only one, for sometimes that one will happen to be bad, but there's the greater risk if you leave two that an afterswarm will issue. No, it's hardly a greater risk either, if the single cell left is bad, for in that case the colony would be left hopelessly queenless.

Parcel Post for Honey

Can extracted honey be sent through the mails in friction-top pails by putting it in wooden boxes, provided the honey is candied solid so that it would not run if the cover was taken off in transit?

MINNESOTA.

ANSWER.—Yes, such honey can go by parcel post all right.

Color of Honey

I have been rearing bees for several years and my honey has been real white, sourwood and other blossoms, and this time the honey is yellow, about the color of gold, and a fine flavor. What is the reason for this?

VIRGINIA.

ANSWER.—I don't know. Of course the change from white to yellow is due to the bees getting honey from some new source; but I have no idea what that source is. Possibly some other Virginian can help us out.

Where to Get Bees

I want to start an apiary and don't know where to obtain some Italian bees. Will you please give me the desired information.

LOUISIANA.

ANSWER.—I have no means of knowing any better than you. Your first effort should be to get the bees as near by as possible, since expressage is very expensive, and the railroads will not accept bees by freight. A little ad in your local paper might discover some one close by, having Italian bees of whom you had no knowledge. Possibly you may find in the advertisements of this journal what you want, and if not then an ad in these columns costing very little would probably bring a number of offers.

Preventing Increase—Wintering

1. Last spring I bought three swarms of bees from one of the neighbors and they all have crooked combs in the brood-chamber. He did not use starters, and they are so crooked that I cannot pull the frames. These same colonies have each swarmed three times already. The first swarms were large. I hived them in new 10-frame hives. The next three swarms were smaller. I also hived them in 10-frame hives, and the last three were small. As I did not want any more bees, I killed the queens in the last three swarms and put them back in the parent hives. They did not swarm any more. As I don't want any more swarms, how can I prevent them from swarming?

2. One morning I found six dead queens in front of one of the hives. Why do they have so many queens?

3. Two of the first new swarms have already 75 pounds of comb honey. They were hived about three weeks ago. One of



APIARY OF C. KLABUHU & SONS, CONNEAUT, OHIO

all are off that are ready to take, setting them on end on the ground, leaning against their hive or some other hive, or perhaps setting them on top of an adjoining hive. Then return any that are not ready to take yet, put on the escape, and then the super or supers that are ready to take.

2. Unless your hands are dirty, I don't believe washing in salt water will do any good, and then soap is better than salt. When bees are swarming they seldom feel like stinging.

3. That often happens. I don't know just why.

4. You can return it to the hive it came from, but if you return it to some other hive the bees might be killed. You can return it just the same as you hive a swarm in an empty hive.

5. An egg hatches in three days. Then the larva grows rapidly during the five or six days it remains unsealed, and you can tell something about its age by its size. After it

of some of the drone-comb, if with a good queen the bees still have too many drones.

3. I don't know of any safer plan than the newspaper plan, unless it would be more newspaper. For with more than one thickness of newspaper the bees would have a bit longer time to unite.

Replacing Combs in Same Order, Etc.

1. To what extent at this time, or any other time, does it make any difference when examining colonies to replace the frames in the same order as taken out?

2. Do you destroy all *but* one or two queen-cells? Is it not risky to leave only one? or is it the correct thing to leave only one?

PENNSYLVANIA.

ANSWERS.—1. Early in the season it is quite important to keep combs in same order in hive, for the bees have the brood-nest arranged approximately in the form of a sphere, in the best form for the production of brood, and any disarrangement may result in loss of brood. When hot weather

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the neighbor beekeepers told me that they have too much honey and no brood; that the workers fill the combs with honey as fast as they are made, and the queen has nowhere to lay eggs. He told me they would die this winter.

1. As I have no cellar, how can I winter my bees safely out-of-doors? SUBSCRIBER.

ANSWERS.—1. One way of preventing too much increase is to do as you did in one case, that is to return the swarm as often as one issues. But that may be more trouble than you like. Here's an easy way to prevent afterswarming: When the prime swarm is hived, set it on the stand of the old colony, setting the old hive close beside it, facing the same way. A week later move the old hive to a new stand 10 feet or more away. That's all; the bees will do the rest. For when the hive is moved to a new stand the bees will go to the fields just the same as if they had not been moved, but when they return, instead of going to their own hive they will return to the old stand and join the swarm. This will so weaken the mother colony that all thoughts of swarming will be given up, especially as no honey will be brought in for a day or two after the change of place. If you want to prevent all swarming, that's a more difficult matter. Inform yourself thoroughly by means of such a book as Dadant's Langstroth, and you will be in better position to know what plan is best for you. My book, "Fifty Years Among the Bees," is especially full as to the matter of hindering swarming. But I must confess that I have not been able to prevent all swarming to my entire satisfaction. It may be some help to say that if you succeed in getting a young queen to be reared in a colony and get to laying, that colony is practically certain not to swarm the same season.

2. Nature generally makes bountiful provision against danger of failure. Take an apple tree, one that is thoroughly filled with blossoms. What if every blossom should produce an apple? If there's one apple for every ten blossoms there will be a heavy crop. But if there should be merely enough blossoms for each expected apple, something might happen to a good many of them, and then there would be a shortage in the crop. Same way with the bees. Hundreds of drones are reared for every one needed, so there shall be no lack, and a number of extra young queens are also reared. At the last there may be a duel to settle which one of these young queens shall reign, and that gives you a chance to have the most vigorous one left.

3. If there's a good queen in the hive, don't you worry about there being no brood. But you can easily lift out the frames and see for yourself whether there is brood or not.

4. Every beekeeper needs a good book, such as Dadant's Langstroth, to teach him the principles of beekeeping. This department is not intended to take the place of such a book, but to supplement it, for after you have studied your book carefully there will still be plenty of questions to which you would like answers. All the time there are new members entering the family of the American Bee Journal, and if each of these depended upon getting all his information from these pages, there would be little chance for anything new. For instance, one of the questions pretty sure to come up in the mind of every beginner is whether the old or the young queen goes with the swarm. If all beginners were to depend entirely for their information upon this department, without any bee-book, then that question might happen in nearly every number, and it would become some-

what monotonous. After getting from your book all the information you can about wintering outdoors, any further questions arising upon the subject I shall be glad to answer in this department if I know enough. At the same time it may be well to say that if you can find some one in your neighborhood who winters successfully outdoors, it will be a safe thing to follow his plan.

Caucasians or Italians?

1. I have five colonies of black bees which I would like to Italianize. Which would be the best, the golden or leather-colored Italians?

2. Could I keep Italians successfully if black bees are three miles from me, without crossing the two?

3. Which is the best bee, the Italian or the Caucasian?

4. Which winters the best and which gathers the most honey? Which swarms the most and first, and which is the best controlled and gentlest?

5. Is there any book printed that answers any of the above questions? ILLINOIS.

ANSWERS.—1. Generally the leather-colored are preferred.

2. There would be likely to be crossing, but with care you can keep the Italian blood predominant.

3. Most beekeepers prefer the Italian. But Italians are not all alike and neither are Caucasians.

4. I don't know that there's much difference as to wintering; some Italians store more than the average Caucasian, and some Caucasians store more than the average Italian; on the whole, Italians are supposed by most beekeepers to be the better storers; the swarming is a mixed affair, and so is gentleness. Some Caucasians have been reported the most gentle bees in existence, while others have been reported vicious.

5. Dadant's Langstroth will meet your needs; so will Root's A B C and X Y Z

Preventing Swarms—Entrance Guards

1. Do you use ventilation under supers or open at the top through summer?

2. Do you like to destroy all queen-cells but one or clip the queens' wings for the prevention of swarming?

3. Why not destroy all queen-cells instead of destroying all but one?

4. I tried to put on some supers with started sections, including three or four sections filled with honey in early spring to prevent swarming; but some swarms issued. Why?

5. Is it dangerous to put entrance guards at the bee entrance with ventilation at the top for preventing swarms?

6. Will bees carry lots of honey when bee guards are used at the entrance with ventilation at the top? INDIANA.

ANSWERS.—1. Generally, with section supers, I have ventilation at the back end between the hive and lower super, and sometimes in the cover of the hive as well. In a cool time, however, it is better to have the ventilation closed, for sections at that part are not finished so soon.

2. To prevent a prime swarm, neither one will answer. Destroying not merely all but one, but all cells will generally delay swarming, and sometimes prevent it, but too often the bees will swarm in spite of cell killing. Clipping the queen doesn't have the slightest effect in preventing swarming. All it does is to prevent the queen flying with the swarm, and then when the bees find the queen is not with them they return to the hive. But if the beekeeper does not interfere, the bees will swarm just as soon as a young queen is reared.

3. You do destroy all cells when trying to delay or prevent a prime swarm. But when a prime swarm has issued, and you want to

prevent an afterswarm by killing cells, you must leave one for a new queen; otherwise the colony would be left entirely queenless.

4. Giving bait sections will generally start work sooner in sections; but that doesn't prevent swarming; only it helps just a little toward prevention.

5. If opening for ventilation is large enough for bees to pass through, entrance guards will have no effect whatever. Neither will entrance guards have any effect in preventing swarming; all they do is to catch the queen when the bees swarm. Of course, when the queen is caught in the guard the swarm will return; but there will be trouble later.

6. It will make no difference as to their carrying in honey.

Swarms Leaving

After being in the hive all right for 1½ days each, two swarms of mine flew away. I had put them on intended permanent stands and soon after they seemed quiet in the hives. Is that wrong? PENNSYLVANIA.

ANSWER.—Better set the swarm on its permanent stand just as soon as it is hived. For a few days give it abundant ventilation by raising the cover or shoving it forward, raising the hive by blocks under the corner, or in some way making abundant opening below, shading the hive if not in shade. It's dollars to doughnuts that your bees were too close and warm.

Wintering on Super Combs—Feeding in Fall

1. I ran short of bee-hives and have about five swarms which I hived in a shallow super used for extracted honey. They have 10 shallow frames. I wish to know what you would do with them; unite them with other swarms or let them winter in these supers, and in the spring put them in the regular hive.

2. How would you go about it to put them in the regular 10-frame hive?

3. I use the 10-frame hive, and my bees seem to have plenty of honey every winter. Would you advise me to extract some of the honey and put the empty combs back, or is it best to let them have all the honey?

4. Why is it a good plan to feed the bees in the fall when their hives seem so full of honey? IOWA.

ANSWERS.—1. Unless they are weak and you want to unite them with other weaklings, better leave them to winter as they are.

2. In the spring set the shallow story over the regular hive, which should have frames filled with foundation. When brood appears in the lower story, put a queen excluder between the two stories, making sure that the queen is in the lower story. Eight or ten days later kill all queen-cells that may be in the upper story.

3. Much better leave all the honey. You'll get it back with interest in the harvest.

4. I don't believe it is a good plan.

Bee Martins

Do martins seriously bother bees? If so, would they prove a handicap to a person who is just starting beekeeping in a community where there are a great many of those birds? ILLINOIS.

ANSWER.—I have never heard that martins were seriously troublesome to bees.

A Swarm—Italian Marking

On June 9 a medium-sized swarm was hived for me. On the 11th I moved it to its permanent location. My books say that the supers should always be taken from the old hive and be given to the swarm, as the working force is always there. Not being there when the bees swarmed, and not being the owner of the parent colony, I couldn't do this. On June 20, I opened the hive and found the

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ten frames of foundation all drawn out and chock-full of honey and brood. I now intend to put on a super of sections with full sheets of foundation, with the hope of securing a little surplus before the flow ceases.

1. What would have been the proper course to pursue under the circumstances?

2. How can I tell whether my bees are hybrids or Italians?

3. Would it be practical or advisable to divide this colony for increase, or is it too late in the season? I can only see them about once a week. Almost all of the bees are 3-banded or leather colored, but I noticed a few that were black and smaller.

PENNSYLVANIA.

ANSWERS.—I. You brought your bees to their permanent location five days after they were hived, and at that time you should have given them the super with a bait section in it. That would be about the same as giving the super from the patent.

2. If they are Italians they should have three yellow bands, although the band nearest the head does not show very distinctly.

3. Yes, you have time enough to divide, and if there is a fair fall flow you should have two colonies ready for winter.

REPORTS AND EXPERIENCES

Packing in Single-Walled Hives

Why not? It can be done with less expense; for the apiarist it's more convenient, and for the bees it's more advantageous.

(a) Less lumber is used, less packing is used for same results, and much less work is used in caring for the same.

(b) For spring work, your hives are separate. In locating early in out-yards, you don't have to unpack, and your devices for packing are much more easily handled.

(c) The bees are placed in a vertical hive instead of a horizontal hive. Bees can move cluster up and down in the hive much more readily than across the combs. The honey is more accessible. In the spring there will be no damp moldy combs at one side of the hive while the bees occupy the other.

How it's done. I use the divisible brood-chamber, *i. e.*, the shallow super $4\frac{1}{4}$ inches deep. When the work is done in fall I take three such supers, placing six combs in the center of each, six of the heaviest combs at the top, two heavy combs at the sides in the

for base $11\frac{1}{2} \times 16$ inches, two sides 11×20 for back, 18 inches for front, at top of the 11×1 a slope to $\frac{1}{4}$ inches is made to come under the cover. These sticks are notched down one-half and nailed together. On the outside tarred paper is used, on the inside burlap, placing my packing between. Then I use baling wire and tie front cushion to back. If well done you have a warmer, a more convenient and a cheaper hive than any double wall hive made.

Staunton, Iowa.

R. B. DAVIS.

Bee Escapes of Wire Cloth

J. E. Crane asks in the American Bee Journal for July, page 231, about bee-escapes made of wire cloth instead of board. I have used this kind of an escape for several years, and with me I think they are as near perfect as possible. I use the Heddon divisible brood-chamber hive, 8 and 12 frame, with top and bottom $\frac{1}{2} \times 13 \times 16$ inches. As a matter of course, during a rush of honey, the spaces



APIARY OF CARL H. TUDOR, AT DE KALB, ILL.

center, filling in the center the best I have left, leaving at the bottom six combs as I find them, thus removing two of the poorer combs from the hive.

I place two $\frac{1}{4}$ -inch division-boards on each side of the bees, throwing over and binding these boards together with burlap. I press my packing material down tight on each side of the bees ($\frac{1}{2}$ inches of packing), put on super, fill same, and we are ready for the ends.

I place cushions on ends made thus: Stick

between excluders and frames are filled with bur combs and more or less honey. When I used boards for escapes sometimes the honey would cover the board so badly the escapes would be clogged so the bees would drown, and in very hot weather they would smother but with the wire-cloth all is dry.

I have never had the Porter escape fail to work with the wire cloth. I take off all my honey from about 500 colonies with them, or the most of it. The old ones I am constantly

changing.

I was amused to read the experiences of some of the bee-men moving bees. I am situated along the Sacramento river. I do all my extracting on a barge, rigged with a wire cloth tent, 12×24 inches; an extractor with eight baskets, each basket holding two frames, run with a gas engine. The extractor reverses under full speed. Honey is let down to barge on a track and car. When one yard is extracted I go to the next. If I wish to move the bees, I load up after the bees stop flying at night. I hitch on the gasoline launch and go to the next yard. No fastening in hives; no combs to fasten, only run the hives down on the wheelbarrow and go ahead.

I am rigging the engine that runs the extractor with a drum to wind up the rope to draw the bees and empty combs back to the shore. The only drawback we have is European foulbrood, which has just made its appearance here. American foulbrood having been cleaned out.

A. E. WILBUR.
Broderick, Calif., July 20.

Good Honey Flow

I am a farmer beekeeper helping my father on a large farm. I have 30 colonies of bees, and have now 1300 pounds of extracted honey.

The honey flow is good here this year, but we have too much rainy weather.

Winona, Minn., Aug. 3. J. J. ELLERS.

Too Much Rain

Bees have been storing honey for the past four or five weeks, but there has been too much rain; only about two or three days in a week may be called good honey days.

Hoopeston, Ill., Aug. 2. G. T. WILLIS.

Cleaning Up in DeKalb

Attached is a photograph of Carl H. Tudor's apiary at DeKalb, Ill. This is so well kept that I think some mention of it is necessary. DeKalb has had its scourge of American foulbrood, and has been cleaned up, but it now has one case of European foulbrood in town. There are over 400 colonies kept in the city limits.

Putnam, Ill., July 28. J. E. PYLES.

Bees Did Fairly Well

My bees have done fairly well through all the rains we have had, and the honey is of a fine quality and white as snow. Some colonies have as high as 70 pounds of fine comb honey, but the flow is slack now and about over. It is mostly sweet clover.

LOUIS WERNER,

Edwardsville, Ill., July 20.

Prospects Spoiled

In Oakland Co., Mich., the prospect for a big crop is spoiled by 13 days of rain up to date, and it is still raining. Two weeks ago the prospects were excellent, with two to four supers of finished comb honey per colony. Bees are still drawing out combs and storing. Rains have brought another clover bloom, but with the temperature ranging from 60 to 75 degrees, and raining nearly every day, bees were not gathering enough to keep up brood-rearing. Feeding is necessary to keep colonies in a condition for the buckwheat flow, which will be on in 10 days.

Buckwheat is plentiful, and we are hoping for favorable weather so the bees can make up for the loss in the clover flow. Farmers are also suffering from the bad weather, with field after field of hay and grain cut and shocked. Oats are pounded flat by the rains. Potato bugs are making a clean sweep over many fields of potatoes, and insects are getting in their bad work on the apples. If the weather becomes favorable there will be a heavy bloom on the second crop of red clover. Sweet clover is carrying the heaviest bloom I ever saw.

W. L. LOVEJOY.

Clarkston, Mich., Aug. 3.

Half a Crop in Nevada

The honey crop is rather poor in the eastern part of Nevada. We had a cold, late spring followed by extremely dry, hot weather. There will be about half a crop.

Halleck, Nev., Aug. 16. J. E. PATTON.

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Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1A1f 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, \$1.00. Tested, \$3.00. Breeders, \$5.00 and \$10. Robert Inghram, Sycamore, Pa.

PHELPS' Golden Italian Bees are hustlers.

QUEENS FROM THE PENN Co. See our large ad. elsewhere in this Journal.

100 fine Italian queens after Sept. 1, 50 cts. each. Tested, 75 cts. P. B. Ramer, Harmony, Minn.

VIGOROUS prolific Italian queens, \$1.00 each; 6 for \$5.00. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

GOLDEN all-over Queens of Quality. Untested, 75c; tested, \$1.50. A. O. Heinzel, Rt. 3, Lincoln, Ill.

FOR SALE—Untested Golden Italian queens 60c each. Hybrids, 30c. J. F. Michael, Winchester, Ind.

FOR SALE—Bright Italian queens at 55 cts. each, or \$6.00 per dozen. Safe arrival and satisfaction guaranteed. W. W. Talley, Rt. 4, Greenville, Ala.

ITALIAN and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free. Grant Anderson, San Benito, Tex.

ITALIAN QUEENS for sale this season at 60c each; \$7.00 per dozen. Ready April 15. Safe arrival guaranteed. T. J. Talley, Rt. 3, Greenville, Ala.

PLACE your order early to insure prompt service. Tested, \$1.25; untested, \$1.00. Italians and Goldens. John W. Pharr, Berclair, Tex.

FOR SALE—75 colonies of bees in 8 and 10 frame Standard Dovetailed L. hives. A No. 1 condition. J. F. Turpin, Carrollton, Mo.

QUEENS—The quality kind. 3-band Italians only. Winners at Hartford and Berlin, 1914. Untested, \$1.00. A. E. Crandall & Son, Berlin, Conn.

QUIRIN's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

My FAMOUS BRIGHT ITALIAN QUEENS will be 55c each after July 1. Send for price list. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

SUPERB Golden and 3-banded queens at \$1.00 for one; \$7.50 for 12; \$32 for 50; \$60 per 100. Bees in pound packages in season. Frank A. Leib, R. F. D. 7, San Jose, Calif.

ITALIAN QUEENS—Breeders, \$2.50, \$5.00; and \$10. Untested, \$1.00 each; six for \$5.00, \$9.00 per dozen. Doolittle & Clark, Marietta, N. Y.

FOR SALE—About 200 colonies in 10-frame hives; extractor and other necessities; in good climate and fair location. Write or come and see. M. B. Bailey, Agt., Christine, Tex.

LEATHER-COLORED ITALIAN QUEENS, 70c; untested, 95c; test, 1-frame brood nucleus, \$1.25; 2-frame, \$1.00; 1-lb. bees, \$1.00; 2-lbs, \$1.75. Free from disease. C. H. Cobb, Belleville, Ark.

CHOICE QUEENS, Italian, Caucasian or Carniolan. Warranted, 60c each. Tested, \$1.00. Breeders, \$2.50. Virgins, 40c each, 3 for \$1.00. Stanley & Finch, 1451 Ogden Ave., Phone, Haymarket 3384 Chicago, Ill.

PURE ITALIAN QUEENS—Guaranteed; by return mail. One, \$1.00; 6, \$4.25; 12, \$8.00; 50, \$32; 100, \$60. Also bees by the pound, nuclei and full colonies. Please send for free circular. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Golden and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00. Breeders, \$5.00 and \$10.00. 2A1f J. B. Brockwell, Barnetts, Va.

ITALIAN QUEENS, also the Golden Beauties and Carniolans. Tested, \$1.00. Untested, 75c each. For bees by the pound and queens in lots write for prices. Page Bankston, Buffalo, Tex.

THE SECRET OF SUCCESS is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and \$1.00 for tested. G. W. Moon, 1904 Adams St., Little Rock, Ark.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10. Tested Queens, \$1.25; dozen, \$12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, \$1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., \$1.50. Nuclei, per frame, \$1.50. C. B. Bankston, Buffalo, Leon Co., Tex.

NOTICE—R. A. Shults will sell Italian queens in the season of 1915. Untested, \$1.00. After June 1, 75c; tested, \$1.50; select tested, \$2.00. Breeders, \$5.00. Bred from Moore and Doolittle stock. R. A. Shults, R. F. D. 3, Cosby, Tenn.

QUEENS from my honey-gathering stock, 3 and 5 band Italians. Bred in separate yards. Queens the rest of the season—one, 75c; six, \$3.00; 12, \$7.00; 25, \$13. Safe arrival and satisfaction guaranteed. D. E. Brothers, Attalla, Ala.

FOR SALE—Improved leather-colored Italian queens, very hardy and bred for business. Select untested, \$1.00. Also Golden, Carniolan, and very gentle and hardy Caucasian queens at same price. Virgins, 50c each, or five for \$2.00. F. L. Barber, Lowville, N. Y.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

I CAN supply you with Golden or three-banded Italian queens. Tested, \$1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, \$1.25. Nuclei per frame, \$1.25. Write for prices on large orders. Everything guaranteed. I. N. Bankston, Buffalo, Tex.

HOLLOPETER's THREE-BAND Italian queens must be seen and tried to be fully appreciated for hardiness, honey-gathering, hustlers, etc. Now 60c each. A trial order of six for \$3.00. Pound bees with queen, \$2.00. Safe arrival and satisfaction guaranteed. J. B. Hollopeter, Queen-breeder, Pentz, Pa.

FOR SALE—Golden Italian queens that produce golden bees and good honey gatherers. Tested, \$1.00. Select tested, \$1.25. Untested, 60c; dozen, \$7.00. D. T. Gaster, Rt. 2, Randleman, N. C.

FOR SALE—Between 60 and 70 colonies of Italian bees on Hoffman frames in good condition and good location, in sunny southern Florida; a house 10x20 feet built in sections, household goods chickens, etc., at reasonable price. Bees make honey in winter. Reason for selling, too old. Address, P. O. Box 217, Fort Lauderdale, Fla.

GRAY CAUCASIANS—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application. J. J. Wilder, Cordele, Ga.

FOR SALE—Queens, three-band Italians. Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard. Untested, one, \$1.00; 6 for \$4.50; 12, \$8.00. Ready June 15. When ordering, state time within which queens are wanted. They will be mailed promptly or money returned. D. G. Little, Hartley, Iowa.

FOR SALE—Three-banded Italian queens from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c; 6, \$4.25; 12, \$8.00. Tested queens, \$1.25; 6, \$7.00; 12, \$12. Selected queens, add 25c each to above prices. Breeding queens, \$3.00 to \$5.00 each. For queens in larger quantities, write for prices and circulars. Robert B. Spicer, Wharton, N. J.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—White extracted honey, 7c; amber, 6c; two 60-pound cans to case. Well ripened and mild flavored. H. G. Quirin, Bellevue, Ohio.

WE are looking for a good party to ship us A No. 1 honey. Please state prices in light and dark. Address, Emil Strudle, 1393 12th St., Milwaukee, Wis.

FOR SALE—Fancy extracted honey, sweet clover, at 7c by the case. Also 5 lb. F. T. buckets at \$5.00 per case of 60-lbs. Send cash. Virgil Weaver, Falmouth, Ky.

FOR SALE—Raspberry, Basswood, No. 1 white comb, \$3.00 per case; fancy, 3.25; 24 Danz. sections to case; 6 to 8 cases to carrier. W. A. Latshaw Co., Clarion, Mich.

FOR SALE—Light extracted honey, clover and basswood blend, in any style packages. Write for prices. Sample, 10 cts. which may apply on order. M. C. Silsbee, R. F. D. 3, Cohocton, N. Y.

FOR SALE

FOR SALE—I. H. C. Truck in fine condition and running order. Will sell at a bargain; have no use for it. Address, L. Werner, Edwardsville, Ill.

HONEY LABELS

HONEY LABELS and Printing. Catalog free Liberty Pub. Co., Sta. D, Box 14H, Cleveland, O.

SUPPLIES.

I WANT second-hand Woodman PROTECTION hives. Quote prices. Hives, care A. B. J.

FOR SALE—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here. J. F. Archdekin, Big Bend, La.

American Bee Journal

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.

A. E. Burdick, Sunnyside, Wash.

FOR SALE—Friction-top pails, 5-lb. size per 100, \$4.50; 10-lb. size, \$6.25 per 100; 60-lb. cans, two in a case, 10 cases or more, 60c; 25 cases, 50c; 50 cases or more, 38c per case. All f. o. b. Chicago.

A. G. Woodman Co.,
Grand Rapids, Mich.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Five 8 frame for \$6.00. Hoffman frames, \$2.75 per hundred. Plain sections, \$4.20 per M. Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August. The Stover Apiaries, Mayhew, Miss.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.

White Mfg. Co.,
Greenville, Tex.

Pennsylvania Field Meet

The Pennsylvania State Beekeepers' Association will hold a field meet at the apiary of Chas. C. Wright, of Aldan, Delaware Co., near Philadelphia, on Saturday, Sept. 11, beginning at 10 a.m. Demonstrations and Talks will be given by prominent bee men. An interesting program is prepared. Everybody is invited. Take cars in Philadelphia to 69th Street terminal, change to Collingdale and get off at Aldan.

H. C. KLINGER, Sec., Liverpool Pa.
Dr. H. A. SURFACE, Pres. Harrisburg.

OUR VERY BEST IS THE VERY BEST BEE SUPPLIES

Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.

H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD,
WIS.



Fine Italian Queens

Select 3 and 5 banded stock; gentle, hardy and prolific honey gatherers. No disease. Price, 1 to 3, \$1.00 each; 4 to 6, 90c each. Larger quantity, \$10 per doz. Prompt deliveries. Pure mates. Safe arrival and absolute satisfaction guaranteed. Send me a trial order.

CHAS. M. DARROW
Star Route, - Milo, Mo.

Help Advertise Honey

—By putting—

EAT HONEY

Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. Price, postpaid, 500, 20c; 1000, 30c.

The "Booster's Club" is Not for "Dead Ones"

You are cordially invited to join the "BOOSTER'S CLUB" so that you may assist in a uniform, happy, broad-minded, intelligent and persistent movement to extend the use and push the sale of **honey**. Your **own** honey first, all honey incidentally.

Our members will advise one another of their successes and failures—plan new uses for honey—devise efficient selling schemes for advertising it, and support them. We will applaud when we like, kick when we feel disposed, suggest what appeals, and all smile together as we gather in the extra **money** dividends that are bound to accrue from the boosting.

The **BOOSTER** will carry this message to every member each month. Every number will feature good and efficient selling schemes. You will want them all. Wrap a quarter in paper and enclose it with your name and address, at our risk, for one year's subscription. \$1.00 for five years.

GEO. W. WILLIAMS, Redkey, Indiana

HONEY WANTED

We will need several carloads of extracted honey. In offering your honey, be sure to send sample that will show true body, color and flavor. Also quote your lowest price, f. o. b. your shipping point in your first letter, and state when gathered.

All honey should be in new cans and cases, properly marked and graded according to standard rules. Best grades will have preference. All cans must contain 60 lbs. net.

DADANT & SONS, Hamilton, Ill.

CLOSING OUT SALE

—OF— BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid*:

"Langstroth on the Honey-Bee" (Latest edition, \$1.20).....	\$1.00
"Songs of Beedom" (10 bee-songs—25c).....	.15
"Honey-Money Stories" (25c).....	.15
Hand's "Beekeeping by 20th Century Methods" (50c).....	.30
Wilder's "Southern Bee-Culture" (50c).....	.35
Danzenbaker Bee-Smoker (\$1.00).....	.80

GEORGE W. YORK, SANDPOINT, IDAHO

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, \$1.00; or with a year's subscription to the American Bee Journal—both for \$1.80; or given FREE as a premium for sending us 3 New subscriptions at \$1.00 each.

American Bee Journal, Hamilton, Illinois.

NOW IS THE TIME TO REQUEEN



Now is the time to get ready for next year. If you are just taking off a big crop of honey, your queens will be more or less worn out by their enormous egg production, and will profit by being replaced in many instances.



Possibly you look for a big crop next year. Now is the time, then, to weed out your poor stock, your black stock, or your older queens. You should have young and vigorous queens to start the season next year.



Under any circumstances, weed out your poor stock.



We are in a position to furnish pure stock, either leather colored, three-band, or golden, as you prefer, in very short order and at reasonable prices, and guarantee safe arrival and pure stock.



Our prices for the balance of the season are as follows:

Pure Italian Stock

1 Untested	-	-	-	\$ 1.00
6 "	-	-	-	4.50
12 "	-	-	-	8.50
25 "	-	-	-	16.50

Tested queens, \$1.50 each.

Prices on larger lots on application.

AMERICAN BEE JOURNAL

Hamilton, Illinois

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	No v i to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	I	6	I2	I	6	I2	I	6	I2	I	6	I2
Untested.....	\$1.50	\$7.50	\$13.50	\$1.25	\$6.50	\$11.50	\$1.00	\$5.00	\$9.00	\$.75	\$4.00	\$.75
Select Untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested..	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Bees by the pound, 1 lb., \$1.25; 2 lb., \$2.25; 3 lb., \$2.75.
Nuclei (no queen) 1 fr. \$1.50; 2 fr., \$2.15; 3 fr. \$2.75; 4 fr., \$3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, \$5.00
The very best queen tested for breeding, \$10

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

Books for Beekeepers

Address the

AMERICAN BEE JOURNAL
HAMILTON, ILLINOIS

Pearce Method of Beekeeping.—This is an illustrated booklet explaining the keeping of bees in house attics or lofts, whereby any one, either in city or country, is enabled with only a small expenditure of labor to get a lot of honey without coming in contact with the bees. The methods are all fully explained. Price, 50 cents; or with the American Bee Journal one year, both for \$1.25.

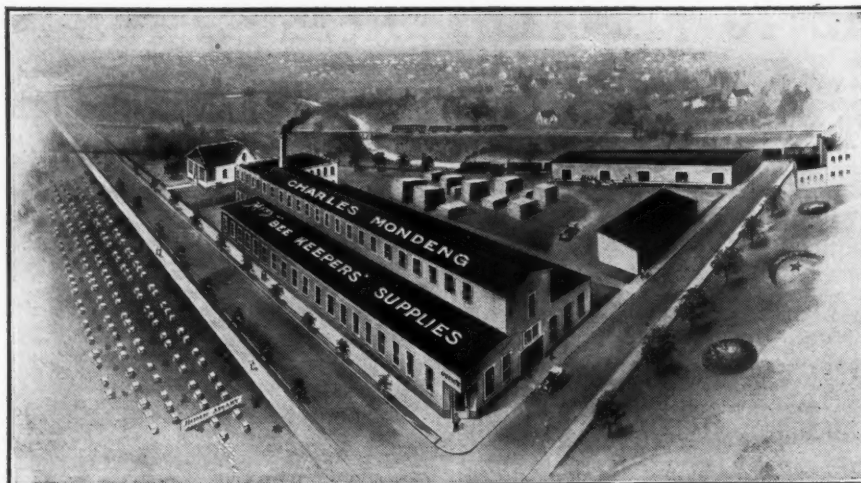
Advanced Bee Culture.—A new edition of this book by the late W. Z. Hutchinson, of Michigan, is a practical and up-to-date bee book for the specialist beekeeper. Its 200 pages touch on subjects pertaining to modern beekeeping, and all are discussed with the authority of an expert. The book has many beautiful illustrations. It is cloth bound, with a cover design in natural colors on its cover. Price, postpaid, \$1.00; or with the American Bee Journal one year, both for \$1.75.

A Year's Work in an Out-Apiary. This is a booklet by G. M. Doolittle, the well known honey producer of New York State. He tells how he secured an average of 11¼ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey producer. Price, postpaid, 50 cents; or with the American Bee Journal one year, both for \$1.25. Every beekeeper should have a copy of this booklet and study it thoroughly.

Langstroth on the Honey Bee.—(Revised by Dadant) The classic in bee culture. A 575 page cloth bound bee book brought up-to-date. It is an authority, and is used as a text book in many schools and colleges. Finely illustrated and well indexed. It is a book which should be in the hands of every beekeeper, large or small. Chapters are devoted to all important bee subjects from bee-anatomy to diseases and honey production and marketing. Price, postpaid, \$1.25, or with American Bee Journal one year, both only \$1.75. French edition of this book, price, postpaid, \$1.50. Spanish edition, postpaid, \$1.75.

Scientific Queen Rearing.—This is practically the only complete book on queen rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens in a wholesale way. G. M. Doolittle, its author, has an entertaining way of writing on bee subjects which helps his readers to follow him with pleasure even if they never intend to rear queens at all. He describes just how the best queen can be reared in nature's way. Cloth bound, 124 pages, 75 cents, postpaid. There is also a leatherette-bound edition of the same book which retails at 50 cents, or with the American Bee Journal, both for \$1.00.

American Bee Journal

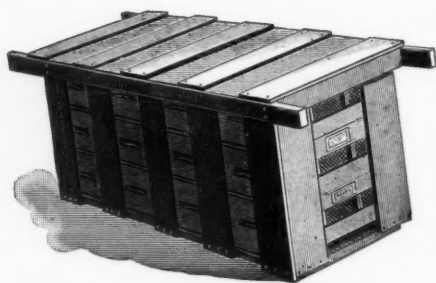


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Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

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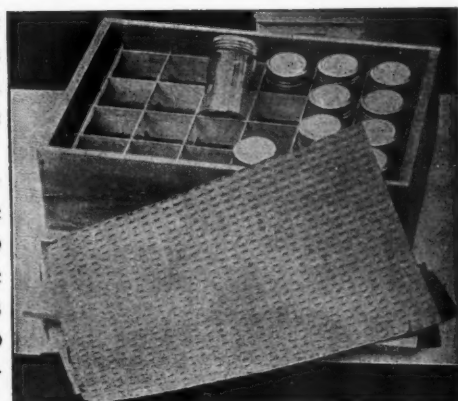
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Comb-honey Carrier

Will enhance the value of your honey and assure you a ready market and the highest possible prices.

Our "Safety" shipping cases will insure safe arrival of your comb honey and thus enable you to reap the benefits of your labor. Cheap and poorly made shipping cases are, indeed, a "penny wise and a



Manner of Packing Glass Jars

pound foolish" policy. We also carry a large assortment of tin and glass honey packages for extracted honey. Our printing department is prepared to furnish neat and attractive looking cartons for comb honey and honey labels at reasonable prices. Ask for our honey label catalog with samples and prices.

THE A. I. ROOT COMPANY, Executive Offices and Factory, **MEDINA, OHIO**
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Syracuse, 1631 West Genesee St.
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CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohlinger, Berkeley, Calif.
Greater San Francisco

Don't Visit the California Expositions

Without a supply of Allen's Foot-Ease, the antiseptic powder to be Shaken into the Shoes, or dissolved in the foot-bath. The Standard Remedy for the feet for 25 years. It gives instant relief to tired, aching feet and prevents swollen, hot feet. One lady writes: "I enjoyed every minute of my stay at the Expositions, thanks to Allen's Foot-Ease in my shoes." Get it TO-DAY.



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show this standard high grade fully visible typewriter to your friends and let them see wherein it excels any other \$100 typewriter, if by doing this and rendering other small assistance, you could easily earn one to keep as your own. Then by post card or letter to us simply say "Mail Particulars."

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BEE-KEEPERS:—

We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

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Marshfield, Wis.



\$ 2 \$ A MONTH

buys a Standard Type-writer your choice. Late Style Visible Back Spacer, Tabulator. Two-color Ribbon. Every modern operating convenience. My prices lower than other cash prices. Perfect Machines. Fully guaranteed. Ask for Special.

Five Days Free Trial Offer. **H. A. SMITH**
230-231 N. 5th Ave., Chicago, Illinois

Beekeepers' Supplies

Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.

Get my prices before placing your orders.

R. H. SCHMIDT

Rt. 3, Box 209, Sheboygan, Wis.

START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

Gus Dittmer Company, Augusta, Wisconsin

PORTER BEE ESCAPE SAVES HONEY TIME MONEY



For sale by all dealers.

If no dealer, write factory

R. & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

Please mention Am. Bee Journal when writing

FREEMAN'S FARMER North Yakima, Wash.

Successor to Northwest Farm and Home
69 YEARS OLD

If you want a descriptive and agricultural magazine, it will inform you all about the methods in the Pacific Northwest. Send One dollar and have the magazine sent for one year. Cut rate of one-half price now on.

Three-Banded Italians

GET THE BEST

Twenty years selection and breeding brings Murry's Queens above the average. Untested, 75c; 6, \$4.00; 12, \$7.50. Tested, one, \$1.00; 6, \$5.00; 12, \$10. Select tested, one, \$1.50; 6, \$8.00; 12, \$15.

H. D. MURRY, MATHIS, TEXAS

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High Hill, Montg. Co., Mo.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; 6, \$5.00; 12, \$9.00
Select untested, \$1.25; 6, \$6.00; 12, \$11.00

Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

J. P. MOORE,
Queen-breeder Rt. 1, Morgan, Ky.

Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED-CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, 75c; 6, \$4.00; 12, \$7.50. One select untested, \$1.00; 6, \$5.00; 12, \$9.00. A specialist of 18 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brookville, Pennsylvania

Make Hay While the Sun is Shining

Gather your honey crop while there is a chance. If you are in need of supers, sections, comb foundation, frames, etc., write or wire us, and we will send your order out the same day.

We carry a large stock, and can fill any and all orders at once and without delay. **Root's Goods** are synonymous with perfect workmanship, the best of raw materials, and **Weber Service** means attention to details and prompt shipments. Save freight. Order from us.

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Cincinnati, Ohio

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DADANT'S FOUNDATION

Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over, because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

DADANT & SONS,
HAMILTON, ILLINOIS